

DEPARTMENT OF AGRICULTURE AND TECHNICAL
INSTRUCTION FOR IRELAND.

REPORTS

ON

THE DUBLIN INSTITUTIONS OF SCIENCE AND ART.

The Science and Art Museum—The National Library of Ireland—
The Royal College of Science for Ireland—The Royal Botanic
Gardens, Glasnevin.

Presented to both Houses of Parliament by Command of His Majesty.



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1901.

[Cl. 785.] Price 4d.

To
His Excellency GEORGE HENRY, EARL CADOGAN, K.G., &c., &c.,
Lord Lieutenant and General Governor of Ireland.

MAY IT PLEASE YOUR EXCELLENCY,

I am directed by the Vice-President to submit to Your Excellency the Reports on the Dublin Institutions of Science and Art for the fifteen months ended 31st March, 1901.

I have the honour to remain,

Your Excellency's faithful Servant,

T. P. GILL,

Secretary.

DEPARTMENT OF AGRICULTURE
AND TECHNICAL INSTRUCTION FOR IRELAND,
UPPER MERRION-STREET,
DUBLIN, 15th August, 1901.

DUBLIN CASTLE,
16th August, 1901.

SIR,

I have to acknowledge the receipt of your letter of the 15th instant submitting, for the consideration of the Lord Lieutenant, a copy of the Reports on the Dublin Institutions of Science and Art for the fifteen months ended 31st March, 1901.

I am,

Sir,

Your obedient Servant,

D. HARREL.

THE SECRETARY,

DEPARTMENT OF AGRICULTURE
AND TECHNICAL INSTRUCTION FOR IRELAND,
UPPER MERRION-STREET, DUBLIN.

DEPARTMENT OF AGRICULTURE AND TECHNICAL
INSTRUCTION FOR IRELAND.

REPORT OF THE DIRECTOR

OF THE

Dublin Institutions of Science and Art.

TO THE SECRETARY OF THE DEPARTMENT OF AGRICULTURE AND
TECHNICAL INSTRUCTION FOR IRELAND.

DUBLIN, April 1, 1901.

Sir,—I have the honour to submit the following report for the fifteen months from January 1st, 1900, to March 31st, 1901:—

GENERAL ADMINISTRATION.

Staff.—There has been no change during the period in the permanent staff, but as already reported the want of more assistance in some departments of the Museum, and of technical assistants and skilled attendants, is a great hindrance to progress. The addition to the School of Art of two pupil teachers has worked very satisfactorily.

Office Work.—The usual official work and correspondence has very largely increased during the year. This will be understood from the fact that there were 960 files of registered correspondence, containing about eight letters or papers each, and 382 indexed miscellaneous papers, passed through the office in 1900 as against 840 registered files of about five each, and 256 miscellaneous papers in the previous year, the number of indexed papers dealt with having increased from about 4,400 to about 8,000. The number of outgoing letters has also largely increased, and it will show the variety of work when I mention that about ninety of the papers written, besides a considerable number of notes and telegrams, were in French, Italian, or German.

The work connected with the College of Science in the office has considerably increased owing to the institution of summer courses for teachers, and of courses for teachers in training, and the admission of the veterinary students. The Council of the College held sixteen meetings during the year 1900, the Board of Visitors of the Museum and of the Botanic Gardens met on seven occasions, and the Council of Trustees of the National Library on seventeen. The accounts work has also increased during the year.

Travelling.—I went to London in May and again in July to attend some important sales at Christie's, and also to visit several dealers, and was successful in obtaining a great many very valuable additions to the furniture collection, some of them at exceedingly low prices, and also obtained a very satisfactory share of the Myers Collection, which was divided at South Kensington. In August I visited the Paris Exhibition, and also several Technical Schools in Paris and Rouen. As I have submitted a special report of these visits, I need not further allude to them here.

In February, 1901, I spent six days in London, where I made some inquiries at the British Museum relative to classification of Greek pottery; visited Christie's salerooms and some dealers, and arranged with the Director of the Victoria and Albert Museum for a loan to this Museum next winter of the furniture bought at the Paris Exhibition.

Dr. Scharff, in February and March, 1901, visited the Museums of Brunswick, Magdeburg, and Hildesheim, and inspected dealers' stocks at Cambridge and Bonn.

Mr. Coffey visited Belfast in May to see a find of prehistoric arms and Sir John Leslie's and other collections of Irish antiquities, and in June he went to Kilkenny to see what part of the antiquities in the local museum might be procurable for these collections. In July he went to Monasterboice to see the lower panels of the High Cross which had been uncovered by the Board of Works. In September he went to Enniskillen to see the excavation of a lake-dwelling in the neighbourhood, and in October he visited Cork to see Mr. Day's collection; and he also went to Paris to attend the International Congress of Anthropology and Prehistoric Archaeology. Mr. Buckley went to Colomiers in May to inspect old oak furniture from Normandy, which was afterwards acquired for the Museum. Professor Cole went to London in June to obtain specimens for the mineral collection, and Professor Barrett went in July to see new electrical apparatus. Professor Lyon was sent to Cambridge to see such improvements as have been introduced in recent years in the engineering schools.

Mr. Brenan went to London in August to see the students' works at the annual exhibition, as also did Mr. Luke; and in February, 1901, Mr. Brenan visited Birmingham, Manchester, and Glasgow specially to note the work carried on in technical classes at the schools of art.

As remarked in my report of last year, an extension of the practice of visiting foreign museums and institutions is absolutely necessary if the museum collections and other institutions are not to fall behind those in other countries. I much regret that more of the Museum staff could not be sent to the Paris Exhibition. It would be difficult to overestimate the importance of keeping up the connection with the several collectors and reproducers of the works of art established by the late Director for Art and of the Science and Art Department; and as regards scientific collections, it is absolutely necessary that the officials in charge should frequently travel to see what specimens are being obtained for other museums, to find out by what channels they obtain them, and to see how they are distributed and arranged. As I reported last year, it is becoming every year more necessary to make and to keep up acquaintance with private collectors in various branches of Zoology in all civilised countries. As Dr. Scharff has pointed out, museum keepers now can only rely upon specialists, who are generally private collectors, to obtain accurately named specimens.

SCIENCE AND ART MUSEUM.

Visitors and Hours of Opening.—The number of visitors during the year 1900, was 425,884, of whom 64,165 came on Sunday afternoons, and the number for the three months January, February and March, 1901, was 93,364, of whom 15,955 came on Sunday afternoons. In the twelve months from April 1st, 1900, to March 31st, 1901, the number of visitors was 425,661, of whom 63,894 were Sunday visitors.

The alteration of the hour of closing on two evenings in the week from 9 o'clock to 10, seems to be appreciated by the public, there being always during the latter part of these evenings a sufficient number of persons in the Museum who have evidently come with the proper object of examining some portion of the collections. On an average, there have been sixty-nine persons in the Museum after 9 o'clock every evening who would have had to leave if the Museum had closed at that hour.

Technical Assistance in the Museum.—During the year temporary expert assistants have been employed in the Zoological section, where Mr. G. P. Farran has worked at the arrangement of the collections of amphibia and fishes, and Miss Pike has worked for some time arranging specimens. In the Botanical section Miss Laird has been employed a great part of the year at the economic collections—arranging and labelling. Miss Hughes has been employed chiefly at the Index collection, and also in the economic, and both these ladies have done much work in the Herbarium during the year. Miss M. A. Murray (who has worked under Professor Flinders Petrie, and who arranged the Egyptian collections in the Museum of the National Society of Antiquaries at Edinburgh), commenced in February, 1901, the arrangement of the corresponding department in this Museum.

Publications.—The sale of the short $\frac{1}{2}$ d. Guide during the year continues to fully justify the plan on which it was drawn up; thirteen editions and part of the fourteenth have been sold in three years, comprising 36,244 copies. In preparing the fifteenth edition, I have introduced some improvements, to give rather more general information, and I have prefixed to it an Index by which a visitor may see at once in what part of the Museum any class of objects is to be found; this will, I hope, considerably increase its usefulness. I regret that during the year very little has been done to advance the General Guide which is being published in penny parts. The general work in the office and correspondence, both in connection with the Museum and also with the College of Science, and the many questions which are involved in the proposed new organization and reconstruction, have made it impossible for me to do more than a very little towards this most important work.

Mr. Coffey has been collecting materials for the Guide to the collections under his charge, and Mr. Alabaster has made some progress with the first part of the Guide to the collections of pottery and porcelain. Miss M. A. Murray, whilst arranging the Egyptian collections, is preparing the Guide to them. The care of the Zoological, Botanical, and Geological collections has so fully occupied the time of the proportionately small staff allotted to them, that nothing has been done to provide the public with the Guides so badly needed.

Museum Lectures.—The fourth series of demonstrations or informal lectures was carried out in the winter of 1899–1900, and the list of them, as given in my report for the year 1899, was included in the last report of the Board of Education. The desire to obtain tickets for these lectures is much greater for some subjects than for others, and, of course, in winter very bad weather sometimes interferes with the attendance at them, but on the whole it is very satisfactory, and it is certain that all who take the trouble to apply for tickets and to come, are really interested in the lectures, and do not come merely out of idle curiosity. It may be mentioned that 755 persons attended them during the winter.

The Lectures given in the past winter, 1900-1, were as follows:-

Date.	Name.	Subject.
Nov. 29,	Col. Plunkett,	How to visit a Museum.
Dec. 4,	Dr. Schäffl,	Crocodiles, Snakes, and Lizards.
Dec. 6,	Mr. Strickland,	Engraving and Engravers.
Dec. 11,	Mr. Carpenter,	Lemurs and Monkeys.
Dec. 13,	Mr. Strickland,	Engraving and Engravers.
Dec. 18,	Mr. Carpenter,	Apes and Men.
Dec. 20,	Mr. Alabaster,	Dutch XVIIIth century Faience.
Jan. 3,	Prof. Johnson,	The Flax-dodder and other Parasitic Plants.
Jan. 10,	Col. Plunkett,	Some objects from the Paris Exhibition.
Jan. 15,	Mr. Quammington,	Crabs and Lobsters.
Jan. 17,	Mr. Coffey,	The first use of Metal in Europe.
Jan. 23,	Dr. Schäffl,	Turtles and Tortoises.
Feb. 5,	Dr. Patten,	The Shore and Sea Birds of the Irish Coast.
Feb. 7,	Count Plunkett,	Chapel of Sta. Caterina, Church of San Marco, Milan.
Feb. 12,	Prof. Johnson,	Botanical Specimens for School Teaching.
Feb. 14,	Mr. Lyster,	Writing Materials in olden times.
Feb. 19,	Mr. Nichols,	Irish Sea Fishes.
Feb. 21,	Mr. Pollok,	Representations of Buddha.
Feb. 28,	Mr. Johnston,	Clocks and Watches.
March 5,	Mr. Nichols,	Economic Products of the Sea.
March 7,	Mr. Brennan,	Antique Lace.
March 14,	Mr. Brennan,	Modern Lace.

As it has been said that students and others, who would like to attend, cannot easily do so in the evening, the experiment has been tried this winter of giving some of the Demonstrations at 4.30 in the afternoon, the result is that the average attendance at each lecture in the afternoon has been thirty-five, and in the evening twenty-five. Mr. Lane Joynt gave a lecture on the Leinster Collection of Postage Stamps, and the attendance was so large that he repeated it; 110 persons attended the two.

Building Works.—No works of great importance have been carried out during the past year, though many items of maintenance and repairs have been executed. I have frequently pointed out in previous reports the very unsatisfactory state of the temporary annex buildings, the roofs leak very much during heavy rains, and the buildings within a few years will be very dilapidated; when the plan of the new buildings for the College of Science is decided upon, it will be necessary to consider how this annex is to be reconstructed to accommodate properly the collections now in it, that is to say the fossils, which form one of the most valuable of our collections, the geological and mineralogical sections which are of great and increasing importance, the Natural History stores, which are needed not only for storage, but also for the examination of specimens by experts and students, and the Industrial collection, which, though far from what they ought to be, are of considerable value. I pointed out last year the desirability of this, and also of adding a gallery for models of machinery and other engineering exhibits, and I think, as I then wrote, that it is very desirable that this gallery should be so arranged as to be equally easy of access for students of the College of Science and for the general public.

If the Department contemplates in the future the addition of collections specially arranged for the encouragement of commerce, it is important to reserve sufficient space for this when planning alterations and reconstructions.

Workshops.—In the workshops there has been a great deal of work accomplished. The alteration of the cases for Birds in the Natural History Division was prosecuted steadily, and the Top Gallery has been cased all round between the pillars with the old table-case tops, supported on light

iron girders, and altered so as to render them suitable. A case was also built for the Egyptian Loom. Several of the old table-cases in the Botanical Department have been re-made so as to take up less floor space. Three new cases have been made for the Egyptian collections; the wall cases in the Antiquities Room III, and the Ceramic Room VIII, have been lowered so as to bring the objects exhibited more within the line of sight. Stands have been made for Steel Safe cases, and there has been much work done in fitting up of objects, providing and glazing frames and internal fittings for show cases, mounting of drawings and photographs, etc. The following cases were obtained from outside contractors, viz. :—

- 2 Draw out cabinets for architectural photographs.
- 3 do. do. for stamp collection.
- 1 do. do. for photos of antiquities.
- 2 Steel safe cases for antiquities collection.
- 2 Upright floor cases for do.
- 2 Wall cases for mineralogical collection.

The plans and specifications for all of the above were drawn up in the office and they have all proved satisfactory.

Instead of the locks formerly on the Museum cases, padlocks of a special pattern, with plates attached, both to the locks and cases, are being introduced as opportunity occurs. The advantage of this change is that the lock can be fixed to the case without having to use the key, and should the lock get out of order, it is not necessary to employ a locksmith to open it, for the padlock is wrenched open and returned to the maker or destroyed, and, by this procedure, the key is never given into the hands of a workman. This pattern was invented by Mr. White; it is self-locking, the key being required only for opening it, and there is a stud on the plate fixed to the case which goes into the lock, and is held firmly when the lock is closed, so that this cannot swing about.

These padlocks have now been in use about three years and prove, in every respect, satisfactory.

ART AND INDUSTRIAL COLLECTIONS.

It will be convenient to take the several branches of this department in succession, pointing out the work that has been done and the developments which are proposed in each.

Irish Architecture.—When the cast of the Monasterboice Cross was taken it was impossible to mould the four lower panels of the base, as they were buried in the soil. When they were uncovered, last summer, casts were taken so that the whole cross is now complete. As I pointed out, on April 3rd, 1900, it is very important to secure for the Museum casts of all the important crosses and architectural ornaments which are to be found in many places in Ireland, and I hope that some day we shall see a court devoted to a collection of these relics of a very interesting sub-style of architecture. The numerous pre-historic inscribed stones should also be moulded.

Gothic Architecture.—More examples of Gothic ornamental stone work would be very useful if there were space to show them.

Egyptian Antiquities.—Miss M. A. Murray is classifying and arranging this collection, and it is now divided into (a) casts of sculpture, (b) mummies and their accompaniments, to illustrate mode of burial and Egyptian belief in a future life, (c) amulets, scarabs, and other small

ornaments, (d) pottery, chiefly pre-historic, (e) casts of bilingual and trilingual stones.

When the arrangement of this collection and the part of the Guide which Miss Murray is writing to illustrate it are completed students and the many persons who take an intelligent interest in Egyptology, but have not the opportunity of working at the British Museum, will find here a series of objects which will be of real use to them and add greatly to their interest in the literature of the subject. It is not a branch of the collections which it would be advisable to spend any considerable portion of the funds allotted for purchases, but it may be expedient to buy occasionally some object which does not cost much, but is valuable to fill some gap in a series.

Greek and Roman Antiquities.—These not only, like the Egyptian Collection, illustrate Ancient History, but have generally a high artistic value to students of Art. Most of the objects acquired during the year are valuable as regards both these aims; for instance, Greek Vases, helping towards the completion of a series which should in time be made to comprise all periods of this art; two Terra-cotta Statuettes, better than any of those hitherto in the Museum, and of very graceful design; the copy of a very beautiful Greek Monile or necklace in the British Museum; five specimens of the very fine reproductions of Etruscan jewellery by the late Carlo Giuliano, which it is more convenient to keep with the other jewellery, and a few Roman Coins. More good bronzes, busts, and other specimens are desirable to illustrate Greek art and the classical styles revived in the Renaissance and later periods. The interest of the Cypriote Pottery, of which we now have many examples, is chiefly in tracing the history and development of the art in the Greek islands.

Indian and other Oriental Art.—A very valuable collection of Brass and Copper work from Lassa, showing the striking characteristics of Thibetan art, has been lent by Major Chenevix Trench. Other additions are chiefly in the Ceramic Collection, and probably in future most additions to the Oriental collections will be in this branch, in which Oriental taste in design and colouring is so remarkable.

In No. X. Room, on the ground floor, are now hung on screens the casts of the stone ornament, in relief, in the palace of Fatehpur Sikri at Agra, which have been in the Museum for some years without being exhibited to the public. The casts of Assyrian Sculptures and of Cuneiform Inscriptions have also been transferred from the Egyptian collections to this room.

Renaissance and subsequent work.—The copy of Donatello's Gattoria now in the Museum of Florence Cathedral, which was shown in the Italian Pavilion at the Paris Exhibition by the Signa Terra-cotta Factory, is an acquisition of great value to architects and students, and in this copy the mosaics and the colouring of the original are reproduced; unfortunately, several pieces have been broken in transit, so it will not be possible to erect it for some weeks at least.

Some more casts of Italian Sculpture of the best period are much wanted.

Gems and Cameos.—No addition has been made to this interesting collection.

Coins and Medals.—Some fine gold Roman Coins have been obtained.

Jewellery.—The copy of the Greek Monile in the Louvre and good specimens of the work of the late Carlo Giuliano in Etruscan and Classical styles have greatly increased the interest and value of this collection, which should be further added to, in order that modern jewellers and designers, as well as the public generally, may see as many fine examples as possible.

No additions of importance have been made to the collections of Ecclesiastical Vestments, Fans, and Costumes, and other small objects.

Musical Instruments.—The collection represents well both primitive instruments used in various parts of the world and those of civilised nations, especially of this country, so it is well to make them more completely representative when opportunities occur for doing so without much expense. Three instruments of Irish manufacture have been added.

Furniture.—The collection of Furniture has been considerably extended, and now forms a fairly representative series of the Italian, French, and English Schools, the principal additions being, in the Italian division, a remarkably fine table inlaid with brass, ivory, and mother-of-pearl; and in the French several fine specimens of carved oak furniture from Normandy, a 16th century carved table, some 18th century fine panelling, a cabinet and a commode of black Boule, a Louis XV. Marquetry commode, a Marquetry cabinet, and a "Bonheur du Jour" of Louis XVI. period, and a copy of a chair from the Trianon. To the English furniture have been added two excellent copies of chairs of 14th and 17th centuries, a Chippendale supper or *loo* table, and a mirror. A chair and cabinet were purchased from the Paris Exhibition as examples of the modern Continental style.

It would be advisable to increase considerably this collection, which is so directly useful to all engaged in the manufacture of furniture in Dublin, and to students, but it is difficult to find space for any additions.

Arms and Armour.—A very interesting *facsimile* of a tilting helm, of about the year 1400, has been acquired.

Pottery, Porcelain, and Glass.—Very valuable additions have been made to this room. The seventy-nine Persian tiles, obtained as a share of the Myers Collection, purchased at South Kensington, are of the very highest class, and we also obtained in a similar way some fine tiles for architectural decoration from Central Asia.

Interesting specimens of Romano-British pottery, and several examples of Italian Majolica, of makes not previously represented here, have been obtained to make more complete our fine show of ceramics. Specimens by Castellani, who has revived the old Majolica manufacture, were obtained from the Paris Exhibition. To our collection of Wedgwood has been added a bowl in celadon green, of which we had no example, and a few other pieces and additions have also been made to the Chinese, Japanese, and other branches. This collection is now fairly representative; but gaps in it should be filled up as opportunities occur.

A very beautiful example of the glass lamps, which formerly hung in some of the Cairo Mosques, was obtained from the Myers Collection; some specimens of ancient Syrian glass have been procured, and some additional pieces of Waterford glass. Increased space is greatly needed to display this collection, and I think this might be provided by putting a gallery along the inner wall of the room.

Enamels.—Small pieces of Champlevé, Limoges, and Battersea have been acquired during the year, but the very high prices that good examples command make it difficult to add to our small exhibit of this beautiful art; though, if it is to be revived in Ireland, it is very important that there should be in this Museum a good series of typical examples.

Bronze and Ironwork.—A nice copper Italian Navette, of 15th century, is the only addition, but it is desirable that more good examples should be obtained when favourable opportunities occur.

Pewter.—The objects obtained from the Paris Exhibition will increase the interest of this part of the collection, which should be still further increased, as most of the objects are especially useful for Art Students.

Silver and Plated Ware.—A watch recently acquired is a good specimen of English 18th century work; though placed in the case of "watches," the chief value lies in the finely-worked case, which is a very good piece of goldsmith's work. A few pieces of Irish and other silver have been obtained during the past year, but the prices now obtained make it almost impossible for any one to purchase, except private collectors of great wealth, though it is highly desirable to extend considerably our small collection of silver.

Bookbindings.—More German, French, and other specimens have been recently obtained, and the collection has been greatly improved of late years, so that bookbinders may now find in it many examples of very good work in several styles.

Ivories.—It is desirable that all the ivories and reproductions should be arranged in one room in a regular series, but it has not been possible to do this yet.

Miniatures.—These are now more appropriately placed than formerly in No. II. Passage Room on the First Floor with the Water Colours; it is not likely that this collection would be increased unless under some exceptional circumstances.

Architectural Photographs.—The selection of Professor Goodyear's Photographs to show the asymmetry and constructions giving exaggerated perspective in Italian Renaissance Buildings, are hung on screens in Passage Room No. I., and a beginning has been made with the series of architectural photographs to illustrate all the recognised styles, arranged in cabinets.

Japanese Art.—The very good examples of this art of the best periods are exceedingly useful and suggestive for art students; but it would be useless to get more specimens until more space is available for their display.

Chinese Art.—A Tray in painted enamel has been bought.

Burmese Art.—Eight enamelled Terra-cotta Slabs, from an old Burmese Temple, which show a style of decoration of which we had previously no examples, have been acquired; but it is not likely that Burmese objects will be purchased under ordinary circumstances.

Lace and Embroidery.—These are very important collections, to which some additions have been made during the year, and which should be greatly increased. I hope soon to have more cases put up that the lace may be better shown, and it will be well to spend money liberally in order to get more really good specimens. It is unfortunate that the lighting of this room is not so good as it should be.

Paris Exhibition Specimens.—Some interesting objects were obtained from the Paris Exhibition; these consist generally of specimens of glass, glass, and pottery, to show the modern styles as adopted on the Continent at such manufacturing centres as Paris, Limoges, Vienna, Buda Pesth, and Stockholm. They are very instructive, as showing the naturalistic treatment of foliage and flowers, the use of the figure for decorative purposes, and the remarkable tendency to flowing curves, which distinguish the styles of decorative art now in vogue on the Continent, and showing also the strong influence exercised by the Schools of Art of the United Kingdom. They are at present arranged as a special exhibit in the gallery of the Museum, and comprise two specimens of modern French furniture, a silver plate, by Christofle; some pewter, by Brateau; bronze, by Lerché; door furniture, after designs by Erikson and Carpenter; porcelain, including Italian modern majolica, by Castellani; Swedish porcelain and glass, including a vase of novel manufacture from the Kosta factory; Bustrion Iridescent glass, by Leotz, including some very fine blue colour glass decorated with painting and gilding, by Lobmeyr; and Hungarian pottery in a new style, with a metallic lustre, from the Zsolnay Factory.

The most important object, however, acquired from the Exhibition is the reproduction in terra-cotta, by the Signa Factory, of the Cantoria or Singing Gallery, by Donatello already mentioned. This is a magnificent work; the mosaics are reproduced, and the whole coloured like the original. Several portions were unfortunately broken in transport, so that it will be some time before this model can be erected in the Central Court.

Russian Peasant Industries.—A number of small objects were also purchased to illustrate the Russian peasant industries, as exhibited in the model Russian cottage, near the Trocadero. These are interesting, as they show the traditional crafts of the industrious Russian peasants, who make so many useful articles for their own cottages, and also toys and ornaments for sale. Some of the objects show what has been accomplished in centres where classes have been provided to instruct peasants (and it will be noticed that several of these products are of less artistic interest than those made by the untaught persons); and there are also more elaborately worked articles made in districts where special workshops have been established by landowners to improve the condition of the people.

Addresses to Queen Victoria.—During the last six weeks of the year 1900 there were exhibited the addresses which were presented to Queen Victoria on Her Majesty's visit to Ireland last spring, and which Her Majesty graciously sent to us for exhibition to the public; many of these were illuminated, and some of them were enclosed in gold or silver caskets, which were exhibited with them.

Ethnographical Collections.—One case has been completely rearranged by Mr. Buckley on a system which I have introduced, and which will, I believe, utilise to the utmost the objects exhibited. The principle is that these objects are divided into eight classes, and a large explanatory label placed on each case.

The classes are:—

- (a.) Implements for making fire ;
- (b.) Implements of war and chase ;
- (c.) Musical instruments ;
- (d.) Clothing ;
- (e.) Articles of domestic use ;
- (f.) Implements of agriculture ;
- (g.) Articles connected with religion ;
- (h.) Miscellaneous ;

and the objects in each class are distinguished in the case by the corresponding letters on conspicuous labels, which are placed at each end of the group of objects. By this means the visitor can at once pick out any particular class of objects. For instance, on looking at the objects between the tickets marked A-A., he will find the implements for making fire used by the nation whose productions are shown in the case, and—when the whole of the cases have been thus arranged—by looking at the divisions marked A-A. in each of the cases the visitor will be able to see the various methods employed for making fire by all the different primitive races represented in the Museum, and so on for each other class of implements.

The work of arranging the collections in regular series, and fixing explanatory labels, so that the public may obtain from them the greatest possible amount of information, has, as usual, kept Mr. Longfield and his assistants hard at work during the year.

IRISH ANTIQUITIES.

A great deal of work has been carried on during the year by Mr. Coffey both in the Bronze Age Room, No. III., and the Christian Art Room, No. IV., though an immense deal remains to be done in both of these before there will be anything like a complete arrangement. In the latter room four cases of a new design have been provided, and these contain some of the finest objects in the collection, such as the Tara Brooch, the Ardagh Chalice, the Shrines and the Croziers, to be much better seen than was the case formerly, as the visitor is able to get very much closer to them. Many interesting specimens have been added to the collections during the year. As Mr. Coffey points out in his report, the question of procuring casts of inscribed stones and sculpture in Ireland is of great importance, and as I mentioned in my last year's report, it will be a very serious loss if the remains of Irish Romanesque Architecture scattered throughout the country are not modelled before they are still further damaged by time and weather, for if this is not done before many years have elapsed, many relics of this very interesting and beautiful variety of the Romanesque will be entirely lost to posterity.

ZOOLOGICAL COLLECTIONS.

The re-arrangement of cases on the Upper Gallery to take the lower forms of animal life has been completed and is very satisfactory; the reconstruction of the Bird cases on the Lower Gallery has been continued, and should be completed before the end of the coming

financial year; and the next want is the provision of one or two more large cases for Mammals on the Upper Floor. I propose to make better arrangement of shelves in the cases for Irish Birds on the Ground Floor, and hope that, by exhibiting more specimens in each case, we may dispense with one row of cases altogether, and thus diminish the overcrowding which exist at present.

Several interesting additions were made to these collections during the year, but by far the most important was Mr. Ussher's collection of Irish Birds' Eggs, contained among which are many which have now become rare and practically unobtainable. For the purpose of showing the wide range of variation in clutches such as those of the peregrine falcon, the guillemot, and others, Mr. Ussher's collection is unequalled and invaluable. Much greater progress could be made with the arrangement and exhibition of the large numbers of new specimens obtained if an addition were made to the permanent staff. I think that the public interest in the Natural History collections is certainly increasing, and that larger numbers of boys and girls pay careful attention to them, and I believe that this alone would sufficiently justify us for having adopted the plan of making a separate collection of the Irish Fauna, which, very properly, is the part most interesting to young naturalists, as it leads them to note and take an intelligent interest in the animal life of our own country.

A "Shakespeare Case" has been placed in the lobby at the top of the stairs, containing specimens of the birds which were used in hawking, with label giving allusions to them in Shakespeare's Plays. It is hoped that this will be a further means of awakening greater interest in Natural History.

The collections showing the life-history and methods of destruction of various "Injurious Insects" are fairly complete, and I hope that these collections do much towards awakening in the minds of many persons an intelligent interest in some phases of animal life, which obviously and directly influence the success of agricultural operations; but I think that this exhibition in the Museum does not diminish the desirability of also circulating to schools throughout the country similar exhibits as well as collections to illustrate simple mechanical and artistic processes, as I suggested about a year ago.

BOTANICAL COLLECTIONS.

Professor Johnson, with the help of temporary assistants, has made great progress in the mounting and arranging of specimens in the Herbarium, especially of the large De Tabley Collection given by Lady Leighton, and also in arranging the economic Botanical specimens or products of various countries which are useful in manufactures. The Botanical Department is very much crowded. It is now fairly provided with cases, but I am altering the old desk cases by doubling them up so that they slope up to the centre in a triangular form, thus considerably reducing the floor space occupied without reducing the show space.

Much of Professor Johnson's time has been very usefully occupied by the Department in enquiries connected with the flax, osier, tobacco, and other industries, and in studying the diseases of potatoes and other crops, as well as in carrying out the seed-testing which the Department has inaugurated at the Museum. As regards the tobacco, Professor Johnson was sent to the North of France to inspect the methods of

cultivation there followed, and to obtain the services of a special expert in tobacco growing, who has since then been carrying on investigations and giving advice to growers under his directions. I have made special reports as to the need for permanent assistants in this department of the Museum, instead of the temporary assistants on which the Keeper has to depend at the present, and this has also been recommended by the Board of Visitors.

GEOLOGICAL AND MINERALOGICAL COLLECTIONS.

Professor Cole's principal work during the year has been the arrangement of the Irish minerals, to the number of which he has added very considerably. In the new wall-cases provided for them these now make a very fine exhibit, and with the collection of Irish ornamental and building stones, they show very fairly some of the great natural resources of this country. Whenever the temporary annexe sheds are rebuilt, it will be a matter of importance to provide properly for this branch of the Museum, as well as for the very fine fossil collections which are in them at present.

ROYAL COLLEGE OF SCIENCE.

As the Committee on the future requirements of the College has been sitting, very little has been asked for or executed in the way of improvements to the present building ; but some slight alterations have been made to provide in the Physics laboratory temporary accommodation for the greatly increased numbers brought in by the Schemes for taking agricultural and other teachers. A noticeable fact during the past year was the unsatisfactory result of the examination of the fourteen students entered for the first year. Three of these were Royal Exhibitioners, one of whom left the College during the Session ; the other two passing the Examination with credit, and one of them obtaining the Medal ; but of the eleven remaining students who paid fees, only one passed the Examination fairly well, and took a Scholarship. Two others were permitted to pass a supplementing examination in Mathematics, three left the College during the Session, and five failed to pass the Examination, and the results were so unsatisfactory that the second Scholarship was not awarded. This is only one more proof of what I have so frequently reported—namely, the unsatisfactory previous training of most of the students who come to the College.

Summer courses for teachers were again held in July, as in the previous year. They were well attended, and nearly all the students made the most of the opportunities afforded them ; but it is evident that, as was found to be the case at the South Kensington College, these courses should be arranged to teach improved methods of instruction to those who already have a moderate acquaintance with the sciences taken up, for in the short space of three weeks or four weeks it is manifestly impossible to teach sufficient of any science to qualify as a teacher one who knows nothing of it to begin with. For such persons the courses for teachers now admitted with exhibitions, under the arrangements of the Department, are much more useful, and should in a few years provide throughout the country a nucleus of thoroughly equipped teachers in three or four of the sciences most needed.

These arrangements could not be made till after the close of the Session, but they give to a certain number of teachers courses of Physics or Chemistry to extend over one or three Sessions, the latter being very nearly the usual Associate courses. On the completion of the Session now in progress we shall be in a better position to judge of the results of this new departure. These teachers in training receive free tuition, and a maintenance allowance as granted to Royal Exhibitioners.

Arrangements have also been made for the students of the Royal Veterinary College of Ireland to join the College classes in Chemistry, Zoology, and Botany.

NATIONAL LIBRARY OF IRELAND.

I reported last year that the new room on the first floor of the unfinished wing had been completed, but could not be used until the attendants' tea and cloak rooms should be removed from the passage which leads to it. During the past year nothing has been done, and the room is still closed and useless.

The number of readers during the year 1900 was 148,405, and it may be interesting to note that the numbers for the British Museum Library for the year 1899 was 188,554, and for the National Art Library at South Kensington for the year 1899, 23,908. I think this shows what a very important function the National Library fulfils, and as has been pointed out by the Council of Trustees, and by me, the staff of this Library is far below that of the other great libraries with which we can compare it.

METROPOLITAN SCHOOL OF ART.

The School was attended during the Session 1899-1900 by 483 students, of whom 180 attended the day classes, and 303 the evening classes. In connection with this it may be interesting to note that the number of students at the Royal College of Art, South Kensington, for the Session 1899-1900 was 440. Fifteen students of the School obtained free scholarships by the works they sent up for Art Class Teacher's certificates, or by their success in the National Competition. I remarked last year that as so many of the more advanced students had left the School at one time it was no matter for surprise that no silver medals were won that Session, but this year a silver medal has been again obtained by Mr. William Whelan for an interesting series of drawings of chairs in different styles, and of all periods, and seven bronze medals have been obtained by Miss L. Deane, design for lace; Miss Beatrice M. Elvery, modelled design for tobacco jar; Miss Louisa Evans, model from the cast; Miss Anna L. Jones, design for a portiere; Mr. John McDermott, ornament modelled from the cast; Mr. Thomas Mathers, figure modelled from the antique; Miss Emily Scott, flowers painted from nature.

Miss Beatrice M. Elvery, for her work at the examination in drawing from the life, was awarded a Queen's Prize.

For the selection from the students' work sent to the Paris Exhibition by the Department of Science and Art, a silver medal was awarded by the International Jury; at the Women's Exhibition held at Earl's Court last summer, at which all Schools of Art in the United Kingdom were invited to compete, three, out of the six prizes offered for designs

for silk and for lace, were won by our students—the first prize for a silk dress by Miss Emily Scott, and the first and second prizes for lace designs by Miss Alice Jacob and Miss Emily Scott, respectively.

The demands made upon the designers in the school for work for lace and textile industries in different parts of the country were very large, and keep them constantly fully employed. The necessity of increased accommodation for this class must soon be seriously considered, and it will be convenient to consider at the same time whether room should be provided for instruction in some of the decorative handicrafts. I am persuaded that we suffer in this country from insufficient opportunities for learning most artistic handicrafts, except, perhaps, lace-making and embroidery, and that if there is no immediate prospect of the establishment of separate schools for teaching such work and for supplementing the old system of apprenticeship, this duty should be undertaken at the School of Art.

Perhaps, as the systems of instruction in the elementary and secondary schools of the country are improved, and drawing generally recognized as a necessary branch of education, it will be possible to dispense with much of the elementary instruction which has till now been necessary in the School of Art.

The course of twenty lectures on anatomy by Professor Fraser was attended by thirty-one students, and Mr. Cecil Orr's lectures on Architecture was attended by thirty-two.

In July, for the first time, special summer courses in freehand and geometrical drawing and elementary design suitable to lace and embroidery workers were given to twenty-six National School Teachers and workers from various centres. The experiment was entirely successful. The students generally worked very hard and profited generally by the instruction given them, and I hope that this experiment may be repeated annually and perhaps extended.

The medals and prizes were distributed to the successful students on January 10th, 1900, by Her Excellency the Countess Cadogan.

A small but very varied collection of stuffed birds and a case of butterflies has been contributed by the Zoological Section of the Museum and forms a useful addition to the stock of models and examples for the students.

ROYAL BOTANIC GARDENS, GLASNEVIN.

These gardens were visited during the year 1900 by 407,770 persons. Of these over three-fifths—namely, 264,867, were Sunday visitors, which again shows the wisdom of having these gardens open on Sunday. Between April 1st, 1900, and March 31st, 1901, there were 420,259 visitors, of whom 277,023 came on Sundays. These numbers are a great increase on last year, when, as I pointed out in my report, they were very much lower than usual, owing to the want of means of communication with Dublin, consequent on the taking up of the tramway for the purpose of re-laying it. Allowing for this, however, it must be acknowledged that the high figures for the year 1900 are very remarkable, especially as the weather has generally been wetter than usual. The improvement in our respect, which I noted last year consequent on the erection of turnstiles at the entrance, continues to be very noticeable; but still a difficulty, which is yearly increasing, arises from the large number of perambulators and children's chaises brought into the gardens, which greatly encumber the paths

and interfere with the comfort of other visitors. The institution of a system of passes has enabled better control to be kept over these than was formerly the case, but the numbers are increasing so rapidly, owing to the covering with artisans' dwellings of the open country which till recently surrounded the gardens, that some further steps will, ere long, have to be taken.

No works of importance have been carried out by the Board of Works during the year, and no steps have been taken to provide the house for tropical ferns which is so much needed, nor to improve the water supply. The addition of a night fireman to the staff, which was recently sanctioned, will greatly facilitate the keeping of the houses at a proper temperature during cold weather.

Whilst it is gratifying to record that the large numbers above-mentioned of the Dublin people and visitors from the country visit these Gardens, it is important not to forget the primary object for which they were instituted and are maintained, that is to say, to promote the study of botany by enabling students to see the vegetable products of all parts of the world as they grow, whilst they also teach practically the best methods of horticulture, and bring to the notice of the public new flowers, shrubs, and trees. Students of botany are regularly taken to the Gardens and given practical lessons by Professor Johnson, and the botanical laboratory in the Gardens has been fully utilized.

Thus the Botanic Gardens are a necessary complement to the College of Science and to the Herbarium of the Museum, while with the Art Collection of the latter is closely connected the School of Art, whose students constantly derive inspirations from the beautiful masterpieces of the great decorative artists of past times, whilst in the National Library, close by, they may obtain the knowledge without which many of these treasures cannot be understood or fully appreciated. It is to be hoped that as the years pass by the benefits to culture in its highest sense of these great Institutions will ever be more and more appreciated by the public.

G. T. PLUNKETT,
Director.

APPENDIX A.

REPORT of the DIRECTOR—INSTITUTIONS of SCIENCE and ART.

Months.	Totals, 1899.	1900. Week-days.		Sundays, 1900.	Totals, 1900.
		Morning.	Evening.		
January, 1900, .	31,925	24,895	2,610	4,137	31,642
February, " .	30,268	20,259	1,947	5,770	27,976
March, " .	34,780	24,982	2,668	6,319	31,926
April, " .	39,759	27,833	2,776	7,513	38,122
May, " .	36,753	25,789	2,814	4,892	33,285
June, " .	32,811	31,159	2,667	3,907	37,733
July, " .	37,048	29,863	2,683	5,458	38,004
August, " .	48,961	39,386	3,207	4,823	47,414
September, " .	38,152	28,938	2,603	4,964	36,405
October, " .	35,345	27,405	2,676	6,207	36,288
November, " .	29,616	25,317	2,366	4,941	32,624
December, " .	28,504	24,924	2,052	5,434	32,410
Totals, .	423,928	330,650	31,069	64,185	425,584
January, 1901, .	31,642	26,350	2,989	4,716	30,945
February, " .	27,976	21,380	2,352	5,419	29,101
March, " .	33,969	29,575	1,823	5,820	31,215
Totals, .	517,515	400,905	38,233	80,120	518,248
15 Months.					

ROYAL BOTANIC GARDENS, GLASNEVIN.

Months.	Totals, 1899.	1900.		Totals, 1900.
		Week-days.	Sundays.	
January, . .	5,621	3,221	3,188	6,408
February, . .	15,428	5,309	6,061	11,370
March, . .	27,054	6,339	13,388	19,727
April, . .	42,111	17,145	27,796	44,941
May, . .	37,508	12,633	32,480	45,113
June, . .	43,887	25,213	32,745	57,958
July, . .	44,418	18,316	37,934	54,250
August, . .	44,828	14,921	26,467	41,388
September, . .	29,475	19,902	39,723	59,625
October, . .	22,506	7,841	16,445	24,286
November, . .	26,287	8,210	21,266	29,476
December, . .	5,991	5,853	7,374	13,227
Totals, .	344,614	142,903	264,867	407,770
January, 1901, .	6,409	4,888	2,683	7,571
February, " .	11,370	4,154	7,717	11,871
March, " .	19,727	6,160	24,898	30,553
Totals, .	382,120	158,105	299,860	457,705
15 Months.				

Summary of Attendance at the various Institutions for 12 Months, from 1st April, 1900, to 31st March, 1901.

—	Number of Days open.	Total Attendance.	Daily Average.
Museum,	360	425,661	1,182
Botanic Gardens,	363	420,259	1,157
National Library,	291	147,195	505

Attendance for 12 Months, 1900.

—	Number of Days open.	Total Attendance.	Daily Average.
Museum,	362	425,884	1,176
Botanic Gardens,	364	407,770	1,120
National Library,	293	148,405	507

The average Sunday Attendance was as follows :—

For 15 Months.	1900-1901.
Museum,	1,232
Botanic Gardens,	4,610

The highest and lowest attendances on Sundays were—

Museum, highest, 21st October, 1900,	. . . . .	1,757
" lowest, 2nd December, 1900,	. . . . .	811
Botanic Gardens, highest, 20th May, 1900,	. . . . .	8,783
" lowest, 30th December,	. . . . .	308

The highest and lowest week-day attendances were—

Museum, highest, 26th December,	. . . . .	2,775
" lowest, 2nd March,	. . . . .	583
Botanic Gardens, highest, 4th June, 1900 (Whit Monday),	9,030	
" lowest, 26th February, 1900,	. . . . .	23

SCIENCE AND ART MUSEUM.

APPENDIX II. TO DIRECTOR'S REPORT.

REPORT OF THE KEEPER OF IRISH ANTIQUITIES.

The number of objects added to the collections (including small collections registered under one head) was 215. Of these 75 were deposited by the Royal Irish Academy, and 140 given directly to or purchased by the Museum.

Amongst the most important of those deposited by the Academy were :—

An unusually large and fine Quern in working order, obtained by Mr. Seaton Milligan, M.I.A., in the Co. Cavan, and presented by him to the Academy.

A collection of flint arrow-heads and some other stone implements from the North of Ireland.

A very fine bronze sword found near Enniskillen, and two bronze swords and a bronze spear-head found at Ardara, Co. Donegal.

Two cinerary urns from the Co. Down.

A richly decorated gold "Lunula," or collar, found in the Co. Tyrone; unfortunately imperfect.

A stone mould for a Palstave, complete, in fine condition.

A highly decorated sepulchral food vessel and fragments of a cinerary urn; also a flint knife found with the urn, from the Co. Fermanagh.

The objects acquired directly by the Museum were chiefly for the comparative collection (in process of formation).

The more important are :—

A collection of stone and bone objects, obsidian flakes, and two skulls from the shell mounds at San Francisco, given by W. J. Warburton, Rostrevor, Co. Down.

An important collection of Palaeolithic flint implements and bones of extinct animals from the river drift gravels at Bedford, given by G. Bligh, Monkstown, Co. Dublin. The collection includes 100 fine and characteristic specimens of Palaeolithic implements, and many imperfect specimens; also a large quantity of broken flints and nodules of some interest as illustrating the material from which the implements were made.

A typical series of worked flints, part of the collection made by Mr. Seton Karr at the ancient flint mines in the plateaux of the Nile Valley. Bought from the Liverpool Museum.

Eleven specimens of Merovingian fibulae, bronze inlaid with enamel, from the Forman sale.

The arrangement of the Bronze Age Collections is proceeding. The additional cases recently obtained renders it now possible to make a rapid advance in the arrangement of that part of the collection, and I expect to be able, in the course of the coming year, to divide a considerable portion of the material into periods, preparatory towards a final chronological arrangement. The re-arrangement of the Gold Collection has already been taken in hand, and the earlier portion of this collection is now in chronological position.

The re-arrangements of the Bronze Room will enable that of the ecclesiastical and medieval collections to be proceeded with more systematically. The large collection of prehistoric sepulchral pottery at present in the latter room will shortly be placed in the Bronze Age room, where cases are in course of preparation for it. The space thus set free will enable many ecclesiastical and medieval objects at present scattered through the collections to be brought together in their proper place. The new cases in the Medieval room have given much satisfaction. The re-arrangement of the collection of croziers is nearly finished. This will complete the re-arrangement of the shrines and early ecclesiastical metal work, for which these cases were made.

The fitting of a portion of the basement as a laboratory is badly needed. At present the conservation of antiquities has to be carried on by makeshifts. A laboratory with washing troughs, heating arrangements, sand baths for drying, &c., would greatly facilitate this work. The treatment of bronze and iron objects with solutions, &c., to arrest decay cannot be adequately done until a laboratory is provided.

The question of procuring casts of prehistoric and medieval sculptured stones is deserving of immediate attention. One of the most important series in Europe of archaic inscribed markings of the Bronze Age exists in Ireland, notably, in the prehistoric cemeteries of the Boyne and Lough Crew, Co. Meath. A large literature exists on the subject of these markings, and it is important that the more important examples should be cast before they suffer further loss from weathering. The casts could be effectively exhibited on the walls above the cases as in the Gavrinis Room at St. Germain, or, when necessary, stacked in racks, on casters, as at Edinburgh.

(Signed), G. COFFET.

APPENDIX III. TO DIRECTOR'S REPORT.

REPORT OF THE KEEPER OF THE ART AND INDUSTRIAL SECTION.

During the year 1900 and portion of 1901 considerable additions have been made, by purchase, to the collections, and especially to that of Furniture, including several pieces of French Furniture of the eighteenth century, in Boule, Marquetry and carved wood, and a sixteenth century carved-wood chest (Normandy).

An Italian table, inlaid with brass, ivory and mother-of-pearl, formerly in the Bernal Collection, and an English painted satinwood table, eighteenth century.

A fine fourteenth century Arab Mosque lamp, and a collection of Persian tiles were obtained from the Myers Collection.

The copy of an ancient Greek enamelled gold monile in the British Museum, and other specimens of gold work, were purchased from Messrs. Giuliano, of London, and a repeater watch in case of repoussé and chased gold by Benjamin Sidey (Master of the Clockmakers' Company in 1761) has also been acquired.

Several specimens of English and Irish silverwork of the eighteenth century have also been added to the collections. Some interesting pieces of Italian Majolica and an important Japanese vase were secured for the Pottery and Porcelain Collection.

Specimens of enamelled pottery, porcelain, glass, bronze, and pewter, and a collection of objects selected from the Russian Peasant Industries, purchased at the Paris Exhibition, have been placed on view in the Gallery of the Central Court and in the annexe.

Three cases (containing 108 frames) of Postage Stamps—the Leinster Collection, with additions—have been placed in the Gallery of the Central Court, where they form a very attractive feature. They have been arranged by Mr. William R. Lane Joynt, to whom the Museum is much indebted for bestowing on them much time and care.

The wall cases in the Pottery and Porcelain Rooms have been lowered, which makes them much more useful, and also increases the wall-spaces over them, on which large or framed specimens can be exhibited.

Mr. Buckley was unable to make much progress with the re-arrangement of the Ethnographical Collections in consequence of the large amount of work done by him in the labelling, registration of specimens, and other routine work.

Mr. Alabaster is preparing a guide to the Pottery, Porcelain and Glass Collections, which will be of great assistance to persons visiting these collections, for the proper exhibition of which more space is much required.

The Egyptian Collection is being re-arranged and catalogued by Miss Margaret Murray.

Among the donations to the Museum may be specially mentioned eight enamelled-pottery reliefs, from an ancient Buddhist Temple in Burma, presented by A. M. B. Irwin, Esq.; three specimens of gold work, presented by Messrs. Giuliano, of London; eight specimens of old pillow laces, presented by T. J. Westropp, Esq., M.A.; collections of Peruvian antiquities, presented by J. W. Carpenham, Esq., and Dr. J. Desmond McCarthy; and reproductions of prints in the British Museum, Part IX., presented by the Trustees.

I forward herewith lists (1) of the principal acquisitions by purchase, (2) of the donations, and (3) of the loans.

(Signed), THOMAS H. LONGFIELD.

LIST OF THE MORE IMPORTANT ACQUISITIONS FOR THE SCIENCE AND ART MUSEUM (ART AND INDUSTRIAL SECTION).

Furniture:

- Copy of Oak Armchair, probably fourteenth century.
- Copy of Oak Armchair. English, 1670.
- Painted satinwood Console Table.
- Chippendale Mirror.
- Carved Oakroom Panelling. French, Louis XV. period.
- Carved oak Door and Frame. French, Louis XVI. period.
- Oak Chest. Norman, sixteenth century.
- Armoire, carved oak. French, sixteenth to seventeenth century.
- Armoire, carved oak. French, Louis XV. period.
- Carved oak Wardrobe. Calavdos.
- Mahogany Loo Table.
- Italian walnut Table, inlaid with ivory, mother-of-pearl, &c.
- Boule-work Cabinet, ebonized wood and brass.
- Marquetry Cabinet, signed "Leleu."
- Secrétaire, bonheur-du-jour. French.
- Copy of sixteenth century French oak Table.
- Corner Chair. English, eighteenth century.
- Commode. Boule-work.
- Bombé Commode, rose-wood with brass mountings.
- Copy of Louis XVI. Armchair.
- Terminal Figure, carved wood. Adams's style.

Pottery, Porcelain, and Glass:

- Antique Greek painted Vases.
- Two Tanagra Statuettes.
- Collection of Romano-British Pottery.
- Collection of Cypriote Pottery.
- Collection of Turkish and Persian Wall Tiles.
- Reproduction of Panel of Damascus Tiles.
- Collection of Italian Majolica.
- Chinese Porcelain Plate, with figures of deities.
- Chinese Porcelain Vase and Cover.
- Chinese Porcelain Cup and Saucer, painted—"The Resurrection."
- Chinese Porcelain Cup and Saucer, painted and gilt.
- Japanese Porcelain (Imari) Vase and Cover.
- Japanese Porcelain Dishes (2).
- Japanese Porcelain Teapot.
- Wedgwood Ware Coffee Can and Saucer, black, white, and yellow.
- Wedgwood Ware Cup and Cover, blue and white.
- Wedgwood Ware Bowl, green and white.
- Wedgwood Ware Candlestick, silver lustre.
- Wedgwood Ware Vase, black basalt.
- Wedgwood Ware Inkstand, yellow and blue.
- German Stoneware Ewer.

Pair of Worcester Porcelain Dishes.
 Group—Venus and Cupid—Porcelain.
 Arab Mosque Lamp, enamelled and gilt glass.
 Small collection of Arab and Palestine Glass.
 Snuff Bottle of Chinese cameo glass.
 Tassie Medallion—Admiral Howe.

Silver and Plated Ware :

Silver Dish-ring (copy). Irish.
 Silver Dish-stand. Irish.
 Silver Chalice and Paten. Irish.
 Silver two-handled Cup. Irish.
 Silver Sugar Bowl. Irish.
 Silver Soup Ladle. Irish.
 Silver Sauce Boat. Irish.
 Silver Sauce Boat. Irish.
 Silver Spirit-lamp and Stand. London.
 Silver Spirit-lamp and Stand. London.
 Silver Candleswick. London.
 Silver Snuff-box. Amsterdam.
 Plated Dish-ring.
 Plated Tea-urn

Lace and Embroidery :

Collar of Carrickmacross Appliquéd and Guipure.
 Border of Fausse, Valenciennes.
 Ficha of Italian Raised Point.
 Two pieces of Drawn and Embroidered Work.
 Linen border with silk embroidered Openwork.
 Pair of Curtains, Crewel-work.

Musical Instruments :

Harp, by Egan, Dawson-street, Dublin.
 Zither, by Perry, Kilkenny.
 Double Flageolet, by Ellard, Dublin.

Jewellery, &c. :

Monile. Copy of Greek original in British Museum.
 Pendant (head of Jupiter) and Neck-chain, by Giuliano.
 Brooch and Ear-rings, gold and cornelian, by Giuliano.
 Gold Ear-rings, figure of Victory, by Giuliano.
 Brooch, gold and enamel, by Giuliano.
 Shoulder Brooch, by Giuliano.
 Gold Repeater Watch, by Sidey. English, eighteenth century.
 Silver and tortoise-shell Snuff-box.

Miscellaneous :

Gold Coins of Hadrian, Antoninus, Valentinianus II., Justinus, and Mauricius Tiberius.
 Navette, copper, gilt. Italian, fifteenth century.
 Cardinal's Ring, bronze. Italian, fifteenth century.
 Twelve Models, in wax, by Smyth the sculptor, for the masks emblematic of the rivers of Ireland on the arches of the Custom House.
 Embroidered Bookbinding. German, early seventeenth century.
 Red Morocco Binding. French, sixteenth to seventeenth century.
 Bronze Mortar. Dutch, dated 1639.
 Chinese painted enamel Tray.
 Two Limoges enamel Plaques
 Four Battersea enamel Boxes.

OBJECTS PURCHASED AT THE PARIS EXHIBITION.

Vase, glass. French (Pantin Crystallerie).
 Cup and Saucer, porcelain. French (Alluaud, Limoges).
 Two Panels of Wall-tiles, enamelled pottery. Italian (Castellani, Rome).
 Wall-tile enamelled Pottery. Italian (Castellani, Rome).
 Two Dishes, enamelled pottery. Italian (Castellani, Rome).
 Three Vessels, enamelled pottery. Hungarian (Zsolnay).
 Wine-glass, painted and gilt. Austrian (Lobmeyr, Vienna).
 Three pewter Vessels. French (Jules Brateau, Paris).
 Bust of a Lady, terra-cotta. Italian (Signa, Florence).
 Collection of objects—carved wood, &c.—illustrating Russian Peasant Industries.

Two bronze Vases. French (St. Léreche, Paris).
 Two pewter Vessels. French (St. Léreche, Paris).
 Silver Baptism Plate. French (Christofle, Paris).
 Collection of Lock-plates, Knobs, &c., silvered and gilt metal. French (Paris, designs by Charpentier and Eriksson).
 Two Vases, porcelain. Swedish (Rorstrand, Stockholm).
 Two Vases, porcelain. Swedish (Gustafsburg, Stockholm).
 Three Vessels, pottery. Hungarian (Zsolnay).
 Vase, cameo glass. Swedish (Kosta, Stockholm).
 Four Vessels, glass. Austrian (Loets).

II.

LIST OF DONATIONS TO THE SCIENCE AND ART MUSEUM (ART AND INDUSTRIAL SECTION) FOR THE YEAR 1900.

Gold and Moonstone Brooch. Modern.
 Gold Bulla or Shoulder Brooch. Modern Roman.
 Gold Pendant and Ear-rings. Etruscan design.
 C. and A. Giuliano.
 Miniature Portrait : A lady. Irish. Eighteenth century.
 Miss Charlotte Henry (per Mrs. Ferguson).
 Duelling Pistol. Early nineteenth century.
 H. E. McDowell, Esq.
 Portion of Silk Armorial Band. Italian.
 Miss Warren.
 Small carved ivory Plaque. Spanish, seventeenth century.
 Robert Mannix, Esq.
 Six specimens of Old Pillow Lace.
 T. J. Westropp, Esq., M.A.
 Arawak Indian Girdle.
 Lord Walter Fitzgerald.
 Plaster cast of portion of the Grey Monument, York Minster.
 Six casts of Armorial Slabs in Dersingham Church, Norfolk.
 Victoria and Albert Museum.
 Gilt brass Button, made for visit of George IV. to Ireland in 1821.
 Mr. J. V. M'Alpine.
 Cannon Ball from excavations near Waterford.
 A. E. Greaves, Esq.
 Eight enamelled terra-cotta Slabs, from an old Buddhist Temple in Burma.
 A. M. B. Irwin, Esq., I.O.S.
 Small fragments of Old English Crewel Work.
 Miss Fishbourne.
 Two stone Pestles. Hawaii.
 James Bennett, Esq.
 Five-dollar Note. Alabama, 1864.
 Henry Loughnan, Esq.
 Wedgwood Teapot.
 Frederick Rathbone, Esq.
 Water-bottle, from the Soudan.
 Miss L. Stephens.
 Collection of Peruvian Antiquities : Pottery, Bronze, &c.
 J. Desmond M'Carthy, Esq., C.M.G., M.D.
 Collection of Peruvian Antiquities : Textiles, &c.
 J. W. Carpenham, Esq.
 Reproductions of Prints in the British Museum. Part IX.
 The Trustees of the British Museum.
 Two stamped Bricks, from a Burmese Temple.
 A. M. B. Irwin, Esq., I.O.S.
 Collection of casts of Medals, Coins, &c.
 Tray of Specimen Marbles.
 Miss Mayne.
 Small Tray. Modern Italian Majolica.
 Signor Castellani.
 Bronzo-gilt Medal : Visit of Her Majesty the Queen to Ireland, 1900.
 Edmond Johnson, Ltd.

Four specimens of Antique Glass, from Nazareth,
 Geo. F. Lawrence, Esq.

Book : Buddhist Text in Pali-Burmese on palm leaf.
 Mrs. Sharman Crawford.

Goblet, pewter.
 M. Jules Brateau.

Scotch Bank-note—One pound. 1813.

Lady's Satchel. Early nineteenth century.

Sampler. Early nineteenth century.

Collection of Lady's Costume. Early nineteenth century.

Miniatute of a Lady.

Lady's Workbox.

Small ivory Carving (fragment).

Pair of Cornelian Ear-rings.
 Miss Frazer.

Two Javelins.

Womera.

Nulla Nulla.

Two Boomerangs.

S. J. Hyde, Esq.

Piece of printed Cotton, with portraits of King George III., Queen Charlotte, and family.
 Hon. Gerald Ponsonby.

III.

LIST OF LOANS TO THE SCIENCE AND ART MUSEUM (ART AND INDUSTRIAL SECTION) DURING THE YEAR 1900.

War Drum, from Wateita, E. Africa.

War Helmet, from Wateita, E. Africa.
 Dr. John G. Cookman.

Two Field Guns.

Four small brass Guns.

One Spanish brass Gun.
 Field-Marshal Lord Roberts, v.o.

Two pieces of Antique Lace.
 Mrs. Gould.

Collection of Cypriote Antiquities : Pottery, Glass, &c.
 Lieut.-Col. and Mrs. Kenny.

Silver Chalice and Paten.
 John Mulhall, Esq.

Haida Indian Slate Pipe.
 J. R. Robertson, Esq.

Collection of Objects from Omadurman : Arms, Armour, &c.
 Lieutenant E. A. Plunkett.

Collection of Arms, &c., from the Tirah Campaign.
 Capt. A. W. V. Plunkett.

Collection of Marquetry, and other Furniture, Mirrors, &c.
 Mrs. E. M. Tatlow.

Collection of Tibetan Metal-work, &c.
 Major G. Chevenix Trench.

Specimen of Belfast Delftware. Dated 1724.
 Erskine Quinn, Esq. (per Col. Hopton Scott).

Two specimens of Chinese Porcelain.
 Four pieces of enamelled Pottery.
 W. Maddock, Esq.

Carved oak Armoire. French, seventeenth century (restored).

Carved oak Chest. English.
 Mrs. A. O. Stack.

The Addresses presented to Her Majesty the Queen on the occasion of her visit to Ireland in 1900.
 The Under-Secretary for Ireland.

Three Floats from the Coast of Bolivia.
 Mrs. Hawes.

Silver Rosary Beads. Spanish (?), seventeenth century.

Chinese Porcelain Vase.
 O'Meara Conyngham, Esq.

APPENDIX IV. TO DIRECTOR'S REPORT.

REPORT OF THE KEEPER OF THE NATURAL HISTORY COLLECTION.

The reconstruction of the cases on the First Gallery, and the work of fixing additional cases in the Upper Gallery, has proceeded steadily; but until both of these undertakings are finished the re-arrangement of the Natural History Collections cannot be completed. No additions to the permanent staff have been made, though the necessity of doing so has been pointed out in previous Reports. Meanwhile, a few temporary Assistants have been engaged from time to time in helping me with some of the most urgent work. Mr. Farran assisted in the re-arrangement of the Collections, while Miss Pike aided in the technical work.

The most important acquisition of the year is the Ussher Collection of Birds' Eggs. The majority of the eggs were collected in Ireland by Mr. Ussher himself, and include many unique and beautiful varieties, especially among the eggs of the Peregrine Falcon, Chough, Guillemot, and Razorbill.

In the spring of last year I was allowed to attend one of Stevens' sales in London, where I secured some very rare Irish Lepidoptera. This spring I had an opportunity of visiting several German Museums, and also dealers. Among other interesting purchases may be mentioned a fossil of a variety of Burchell's Zebra, not hitherto represented in the Museum. A good number of native Irish Birds were bought to replace specimens which had suffered from exposure to light and other causes.

Several applications for duplicate specimens were again received this year, and we were able to send, on loan, a very large collection of stuffed specimens and skeletons to the Museum at Queen's College, Galway. Several smaller collections were lent to Dublin schools.

It is to be hoped that the evidently increasing public interest in Natural History may induce the Irish school authorities to appoint teachers in Zoology and kindred sciences. The educational value of these sciences, especially in fostering habits of observation among children, has long ago been recognised in England and on the Continent, where they are taught in all the more important schools.

The following scientific papers, most of which are descriptive of specimens in this Museum, were published by the members of the Natural History staff during the year:—

R. F. Scharff.

A List of the Irish Cetacea.

"Irish Naturalist," vol. ix., pp. 87-91.

The Irish Species of Land-Planarians.

"Irish Naturalist," vol. ix., pp. 215-218.

Rhynchodemus Howesi, a new species of Planarian Worm.

"Linnean Society's Journal (Zoology)," vol. 28, pp. 33-42.

Mormopterus Whitleyi, a new species from W. Africa.

"Annals and Magazine, Natural History" (ser. 7), vol. 6, pp. 569-570.

A. R. Nichols.

A List of the Marine Mollusca of Ireland.

Proc. R. Irish Acad. (3), vol. 5, pp. 477-602.

G. H. Carpenter.

Collembola, from Franz-Josef Land.

Scient. Proc. R. Dublin Soc., vol. ix., pp. 271-278.

Pantopoda, from the Arctic Seas.

Scient. Proc. R. Dublin Soc., vol. ix., pp. 279-282.

Report on Economic Entomology in Report of Council R.D.S., 1890.

The Re-arrangement of the Natural History Collections in the Dublin Museum. Report Museums Association, 1890.

Two Spiders new to the British Fauna.

"Annals and Magazine, Natural History" (ser. 7), vol. 6, pp. 199-204.

The Warble Fly.

"Journal," Department Agriculture and Technical Instruction, Ireland, vol. i., pp. 89-92.

The Turnip Fly and Wireworms.

"Journal," Department Agriculture and Technical Instruction, Ireland, vol. i., pp. 221-227.

J. N. Halbert.

A New Water Mite from Ulster.

"Irish Naturalist," vol. ix., pp. 94-96.

Some Addition to the Beetles of the Dublin District.

"Irish Naturalist," vol. ix., pp. 278-284.

(Signed), R. F. SCHARFF,

LIST OF DONATIONS TO THE NATURAL HISTORY COLLECTION.

Ussher, R. J.

Stock Dove, from Co. Carlow.

Otway, A. L.

Small collection of Bird Skins, from Co. Waterford.

Stears, S. M.

Tawny Owl, shot in Co. Down.

Hely-Hutchinson, G. W.

Argulus foliaceus, L., from Co. Cavan.

Bedford, the Duchess of.

Horns of Pérou David's Deer (*C. Davidianus*), from N. China.

Williams, E.

Left Horn of Reindeer, from Scandinavia.

Grierson, P. H.

Lesser Horse-shoe Bat, from Co. Clare.

Patten, Dr. C. J.

Herring Gull, Knot, and Dunlin, from Dublin Bay.

Smith, Dr. W. G.

Fridericia sp.

Metcalfe, J.

Sparrow Hawk, from Co. Antrim.

Patten, Dr. C. J.

Common Redshank and Redbreasted Merganser.

Warren, R.

Galathaea squamifera, &c., from Killala Bay.

Duerden, Dr. J. E.

Peripatus, from Jamaica.

Bennie, H. M.

Lepidurus glacialis, from Pleistocene Leaf-deposits.

Osterrieth, Mrs. E.

Some Shells, Shark's Teeth, &c., from Crag of Antwerp.

Brooke, Sir D.

Skulls of *Capra argagrus*, Gm., from Donegal.

Fleming, Rev. W. W.

Small collection of Lepidoptera, from Europe, India, &c.

Ovenden, Miss E. G.

Petrognatha gigas, from Uganda.

Greene, Miss E.

Barn Owl, from Co. Kildare.

Barlow, Miss.

Egg of Common Duck, enclosing a smaller egg.

Robertson, J. G.
 Variety of Blackbird (*Turdus merula*) from Co. Dublin.

Westropp, D.
 Small collection of Insects from Ireland and S. Africa.

Pim, Miss.
 Nest of Weaver Bird (*Ploceus*) from India.

Bryan, W. H.
 Small collection of Fossils from Co. Limerick.

Barrow, Miss K.
 Small collection of Lepidoptera from Sikkim.

King, J. J. F. X.
 Small collection of British Insects.

Mahon, J.
 Collection of Lepidoptera from South Africa.

Scriven, Dr. G.
 Wood injured by *Mesites Tardyi* from Co. Dublin.

Delap, Miss M.
 Variety of House Mouse (*Mus musculus*) from Valentia Island.

Gill Rev. F. M.
 Spider (*Dolomedes fimbriatus*) from King's County.

Smyly, J.
 Chipmunk (*Tamias striatus*) from N. America.

Williams, E.
 Puss Moth (*Cerura vinula*) from Dublin.

Academy, Royal Irish.
 Collection of Invertebrates from Lough Neagh.

Randell-Jackson, A.
 Collection of Spiders from the North of England.

Mason, G. E.
 Collection of Arachnids from Tennessee and Ireland.

Cambridge, Rev. O. P.
Agelenia nescia from Canada.

Battersby, Mrs.
Dolomedes fimbriatus from Westmeath.

Boxer, Capt.
 Peacock (*Pavo cristatus*).

Reynell, Miss.
 Small collection of Lepidoptera.

Loughnam, H.
 Slough of Coachwhip Snake (*Coluber obsoletus*) from Texas.

Warburton, J.
 Moth (*Erebus odora*) from off Ecuador.

McClellan, Rev. Dr.
 Small collection of Lepidoptera from West of Ireland.

Thompson, Prof. D'A. W.
Armadillidium Pallasii from Italy.

Mulvey, N.
 Nightingale (*Daulias luscinia*) from Ely.

Academy, Royal Irish.
 Collection of Insects and Spiders from the Cos. Waterford and Cork.

Wall, A. B.
Acherontia atropos from Co. Wexford.

Mahony, Pierce.
 Skeleton of Frog (*Rana*).

Rothschild, N. C.
Cimex pipistrelli from Toome.

Academy, Royal Irish.
 Collection of Insects and Spiders from Wexford.

Mulvey, T.
 Cornerake (*Oreox pratensis*) from Co. Dublin.

Keane, H.
 Young Rook (*Corvus frugilegus*) from Co. Waterford.

Keane, J. E.
 Human Skull from Co. Dublin.

Geoghegan, H.
 Specimens of *Aptychus* from Kimmeridge Clay.

Whitley, Dr. J. C.
 Collection of Terrestrial Vertebrates and Invertebrates from W. Africa.

Holt, E. W. L.
 Collection of Marine Vertebrates and Invertebrates from the West coast of Ireland.

Adair, J. O.
 Brambling (*Fringilla montifringilla*) from Co. Carlow.

Dobbs, J.
 Collection of Fossil Fishes, &c., from Castlecomer.

Rathborne, H. B.
 Small collection of Butterflies from Switzerland.

Wolfe, J. J.
 Pupm of *Colias edusa* from Skibbereen.

Academy, Royal Irish.
 Collection of Marine Shells from Donegal and Kerry.

Bellingham, Sir H.
 Cranium and bones of *Cervus giganteus* from near Castlebellingham.

Skull and bones of Bottle-nosed Whale (*Hyperoodon rostratus*)

Scharff, R. F.
Rhynchosode mus Howesi from the Pyrenees.

Fitzgerald, Lady.
 Collection of Bird Skins from S. America.

Alcock, N. H.
 Small collection of Bat Parasites from Ireland.

Hamilton, W. A.
Gorgonia verrucosa from Donegal Bay.

Lydon, J.
 Small collection of Fishes from Roundstone.

Browne, E. T.
 Collection of Medusæ, &c., from S.W. of Ireland.

Moore, F. W.
Rhynchodemus Scharffii from Glasnevin.

Jones, E. W. A.
 Two Long-tailed Ducks (*Harelda glacialis*) from Lough Corrib.

Welch, R.
 Small collection of Insects and Spiders from Ireland.

Ward, R.
 Head of Reed-Buck (*Cervicopra arundinum*) from S.E. Africa.

Bradshaw, Miss.
 Abnormal Egg of Turkey from Co. Meath.

Barrett, C. G.
Argyritis tarquiniiella and *Tinea confusella* from Co. Dublin.

Kane, W. F. de V.
 Collection of Microlepidoptera from North of Ireland.

Fagan, J. P.
 Skull of African Elephant (*Elephas africanus*) from W. Africa.

Mahony, Pierce.
 Skeleton of Kerry Cow (*Bos taurus*).

Ferguson, Capt.
 Skin of Bustard (*Neotis*) from Lake Rudolph.

Tate, Capt. G. W.
 Collection of Lepidoptera from Sierra Leone.

Sidley, Rev. F. de B.
 Skin of Fruit-eating Bat (*Pteropus*) from Australia.

Thompson, Dr. R. N.
 Ringed Snake (*Tropidonotus natrix*) from Greystones.

Ward, R.
 Three Legs of Zebra from S. Africa.

Patterson, R.
Stenus palpus, &c., from Lough Neagh.

Moore, F. W.
Bipalium Kewense from Botanic Gardens, Glasnevin.

M'Ardle, Capt. J.
 Skulls and Horns of Red-fronted Gazelle (*G. rufifrons*) and Heuglin's Gazelle (*G. tilioura*) from Africa.

Brennan, Rev. S. A.
 Spawn of Aplysia from North of Ireland.

Smith, Miss.
 Small collection of Lepidoptera from Vancouver.

Dunlop, K. M.
 Young Cuckoo (*Cuculus canorus*) from Lucan.

Calman, W. T.
Bosmina coregoni, var. *typica*, from Dumfriesshire.

Tamlin, W.
 Caterpillar of *Acherontia atropos* from Wicklow.

Ussher, R. J.
 Wax-bill (*Estrelda cinnerea*).

Deane, F.
 Crossbill (*Lozia curvirostra*) from Co. Fermanagh.

Casement, R.
 Puff Adder (*Bitis arietans*) from Cape Colony.

Mahony, Pierce.
Chameleoon vulgaris.

Rothschild, Hon. N. C.
Nycteribia from Bundoran.

Farran, G. P.
 Small collection of Coleoptera from Co. Dublin.

Stewart, J.
 Black Tern (*Hydrochelidon nigra*) from Limerick.

Barrett, C. G.
Nonagria brevilinea from Norfolk.

Chaster, G. W.
Anodonta cygnea from Preston.

Oldfield, Thomas.
 Skulls and Skins of Rodents from India and Mexico.

Burbridge, F. W.
 Common Heron (*Ardea cinerea*) from College Botanic Gardens.

Grant, Col. C. C.
 Collection of Fossils from Canada.

Welch, R.
 Patella encrusted with *Lithothamnion* from Bundoran.

Allingham, H.
 Snow Bunting (*Plectrophanes nivalis*) from Ballyshannon.

Fleming, Rev. W. W.
 Collection of Lepidoptera from Canada.

Academy, Royal Irish.
 Collection of Insects, &c., from the Cave of Dunmore.

Marshall, J. T.
Myrissa Simpsoni from the Great Fish Bank.

Mahony, Pierce.
 Shed Antlers of *Cervus giganteus* from Co. Kerry.

Otway, A. L.
 Remains of Red Deer from Co. Wexford.

Pearsall, W. B.
 Casts of Teeth of *Pithecanthropus erectus*.

Hely-Hutchinson, G. W.
Neomysis vulgaris from coast of Donegal.

Simpson, W.
 White variety of Chaffinch from Londonderry.

Ball, C. B.
 Collection of Marine Invertebrates from Lough Swilly.

Otway, A. L.
 Bullfinch, Greenfinch, and Great Tit, from Co. Waterford.

Patten, C. J.
 Dunlin and Ringed Plover from Co. Waterford.

Ussher, R. J.
 Grey Wagtail from Co. Waterford.

LOANS.

Cookman, Dr. J. G.
 Collection of Heads of East African Mammals.

Roberts, Lord.
 Head of Indian Buffalo (*Bubalus bucelus*).

Head of Indian Rhinoceros (*Rhinoceros unicornis*) from Kuch Behar.

Manchester Regiment.
 Head of African Rhinoceros (*Rhinoceros bicornis*) from Uganda.

Brooke, A.
 Rose-coloured Pastor (*Pastor roseus*) from Killybegs.

Hugo, T. N.
 Pectoral Sandpiper, shot at Belmullet.

DONATIONS OF BOOKS AND PAMPHLETS.

Dublin Society, Royal.
 Index to the Scientific Proceedings of the Royal Dublin Society
 from 1877 to 1898, inclusive.

American Museum, Trustees of.
 Bulletin, vol. xi., part ii.

Carpenter, G. H.
 Pamphlet.

Patten, C. J.
 Pamphlet.

Dublin Society, Royal.
 "Jamaican Actiniaria." Sc. Trans., vii. (2).
 An Estimate of the Geological Age of the Earth." Sc. Trans. vii.
 (2).

Indian Museum, Trustees of.
 A Guide to the Fish Gallery of the Indian Museum.

Dublin Society, Royal.
 "On Pithecanthropus erectus," Sc. Trans. iv. (2).

Australian Museum.
 Records. Vol. iii., No. 6.

Thornely, L. R.
 Pamphlet.

Dublin Society, Royal.
 "Report on the Crustacea Schizopoda of Ireland," Sc. Trans. vii.
 (2).

Janet, C.
 Nine Pamphlets on Ants, &c.

Scharff, R. F.
 "A List of the Irish Cetacean."

Harmer, S. F.
 Pamphlet.

Indian Museum, Trustees of.
 "Illustrations of the Shallow-water Ophiuroidea."

American Museum, Trustees of.
 Bulletin, Vol. XII.

Australian Museum, Trustees of.
 Records. Vol. III., No. 7.

Richard J.
 Pamphlet.

Hoyle, W. E.
 Two Photographs.

Buchner, O.
 Three Pamphlets.

British Museum, Trustees of.
 "The Cretaceous Bryozoa." Vol. I.
 "Monograph of Christmas Island."
 "Catalogue of the Lepidoptera Phalense in the British Museum,"
 Vol. II.

Castle, W. E.
 Pamphlet.

Workman, T.
 Malaysian Spiders. Vol. I.

Wallace, R. H.
 Pamphlet.

Stehbing, T. R. R.
 Pamphlet.

Calman, W. T.
 Pamphlet.

Ihering, H., von.
 Revista Musea Paulista. Vol. IV.

Milport Marine Biological Station, Committee of.
 Communications. I.

BOOKS.

Indian Museum, Trustees of.
Pamphlet.

Pfeffer, G.
Pamphlet.

Thompson, I. C.
Eight Pamphlets.

Australian Museum, Trustees of.
Records. Vol. III., No. 8.

Scharff, Dr. R. F.
Seventy-two Pamphlets by various authors.

American Museum, Trustees of.
Bulletin. Vol. XI., Part 3.

Hartlaub, C.
Pamphlet.

Norman, A. M.
Two Pamphlets.

Irish Inland Fisheries Commission.
Report. Dublin, 1901.

Dublin Society, Royal.
Index to Scientific Proceedings.

Academy, Royal Irish.
Proceedings.

Hedley, C.
Pamphlet.

Hoyle, W. E.
Two Pamphlets.

Smithsonian Institution.
Bulletin.

"American Hydroids."
American Hydroids.

"Irish Naturalist," Editors of.
Two Pamphlets.

Foord, A. H.
Monograph of the Carboniferous Cephalopoda of Ireland. Parts 2 and 3.

APPENDIX V. TO DIRECTOR'S REPORT.

REPORT OF THE CUSTODIAN OF MINERALS.

During the year an interesting series of specimens has been purchased from the collection of the late Dr. W. Fraser, of Dublin, including a number of Irish minerals and a handsome specimen of yellow Pyromorphite from Cumberland. Miss Going has presented several specimens from the collection of the late E. Mayne, Esq., of Dublin. Several rare minerals, hitherto unrepresented in the Museum series, as well as examples of newly discovered species, have been purchased. Among striking additions, a large crystal of smoky quartz from the St. Gottbärd, and a richly-coloured mass of Amethyst from Brazil are worthy of mention. The two additional cases provided for the Irish Mineral Collection have allowed of the exhibition of the specimens in a highly satisfactory manner. This series has been enlarged by various gifts, including a set of more than 100 samples of rocks assayed for gold, presented by Mr. E. St. J. Lyburn, A.M.C.Sc.L., and by the transfer of a number of important specimens from the Royal College of Science for Ireland.

Through the assistance of Mr. Lyburn, the Irish Collection has been labelled throughout, while the general Rock Collection is now nearly complete in this respect. The large raised model of Ireland, on the scale of one inch to a mile, has been repainted, the geological features being revised in accordance with the recent work of the Government Survey.

It should be mentioned that the general collection of minerals suffers considerably from the large amount of dust and soot blown in through the roof of the temporary building in which it is exhibited. The raised model of Ireland, though protected at night, becomes injured in a still greater degree.

(Signed), GRENVILLE A. J. COLE,

APPENDIX VI. TO DIRECTOR'S REPORT.

REPORT OF THE KEEPER OF THE BOTANICAL COLLECTION.

I beg to enclose herewith my Report on the Botanical Collections for the year 1900, together with a list of donations.

The chief work in the Herbarium has been the mounting and arranging of the large de Tabley Herbarium given by Lady Leighton. There is still much to be done in the general herbarium before all the specimens in it can be considered in a fit condition for consultation. The "tilting" of the table-cases in the Index-room and in the other rooms now in progress will economise space and facilitate the movements of visitors examining objects.

Further progress has been made with the Economic Botanical Collections. As botanical adviser to the Department, my time has been largely occupied with inquiries on the flax, osier, tobacco, and other industries. In the summer I was called to give evidence before the Seed Committee, and to visit the North of France to obtain the services of a tobacco expert, the Department's tobacco-growing experiments having been placed under my charge.

A seed-testing station has been established, of which I have been placed in charge, and has already examined nearly 300 samples of seeds, with interesting results.

The necessary assistance to which both the Board of Visitors and the Department have called attention has not yet been provided.

(Signed), T. JOHNSON.

DONATIONS TO THE BOTANICAL COLLECTIONS, 1900-1901.

A collection of Dried Plants from Royal Botanic Gardens, Calcutta.
Agricultural Gazette of New South Wales, 1900, and sixty-nine Economic
 Pamphlets, by J. H. Maiden and others.

Presented by J. H. Maiden, Director, Sydney Botanic Gardens.
Agricultural Bulletin and "Note on the Sugar Cane Disease."

Presented by Director, Botanic Department, North-west Provinces and Oudh.
Agricultural Ledger. (Dr. G. Watt's Dictionary of Economic Products of
 India.)

A collection of fifty-one named Cryptogams, chiefly Lichens and Fungi.
 Presented by A. Vaughan Jennings, F.L.S.

A collection of Hazel Nuts, found beneath fifteen feet of Bog at Ballynealy, near Crossmolina.
 Presented by S. T. Williams, Ballina.

Bradford and Sons.

Eleven samples of Osier Rods.

Bennie, H. M. (executor of the late J. Bennie, F.G.S.)

A mounted slide of *Betula nana*, and a slide containing five specimens of *Salix herbacea*.

Cussons, G.

Thirty-two specimens of different kinds of Woods.

Dreaper, Miss.

Five sorts of Osier Rods.

Dickson, Messrs., Chester.

Eight sorts of Osier Rods.

Hunter, J., Chester.

Samples of Seed Impurities, &c.

Icones Flora Japonica, compiled by the College of Science, Imperial University, Tokyo. Volume I.

Jarrold and Sons, London, R.C.

"The Revival of English Agriculture," "Practical Hints on
 Grasses and Grass-growing in East Anglia," &c.

Keen and Co., London.
 Samples of Mustard Manufacture, &c.
 Kinabani, J. G., F.G.S.
 Walking Stick manufactured from a New Jersey cabbage stalk.
 Macmillan and Co.
 Miall's "Round the Year."
 Mrs. Wilson's "Nature Studies in Elementary Schools."
 Barley's "First Lessons with Plants."
 Marche's "First Lessons in Elementary Science."
 Meadows, M.J.
 Sample of Peat (Schonning's patent).
 Sawer, J. Ch.
 "Rhodologia: A Discourse on Roses."
 Sir W. T. Thiselton-Dyer, K.C.M.G., F.R.S., Director of Royal Botanic Gardens, Kew.
 Collection of Mosses, Fungi, and Lichens, from Austro-Hungary; also Duplicates of Economic specimens.
 Squire, Stend, and Co.
 A number of samples of Paper-making material.
 Sutton and Sons, Messrs.
 "Permanent and Temporary Pastures."
 Tobacco (seventeen varieties).
 Given by F. Hayashi, Commissioner-General for Japan.
Tentamen Flora Lutetensis, compiled by the College of Science, Imperial University, Tokyo. Section I.
 United States National Herbarium, No. 5.
 "Forest Trees of the United States."
 "Osier Culture."
 "Forest Nursery."
 "Monograph of the North American Umbelliferae."
West Indian Bulletin.
 Presented by Department of Agriculture, West Indies.
 Walpole Bros.
Chamaecyparis Fortunei and *Cordyline Australis*, in flower.
 Vilmorin-Andrieux et Cie., Messrs.
 212 Samples of Seeds.

APPENDIX VII. TO DIRECTOR'S REPORT.

REPORT OF THE HEAD MASTER, DUBLIN METROPOLITAN SCHOOL OF ART.

I have the honour to submit the Report of the Metropolitan School of Art for the year ending July 31st, 1900.

The total number of students has been 483. Of these, 180 attended the day classes, and 303 the evening classes.

The total amount of fees was £407 7s. 6d. The day fees amounted to £288 2s. 6d., and the evening to £119 5s.

The total number of works sent to South Kensington for examination was 680.

The elementary stages of Freehand Drawing, Model Drawing, and Shading from the Cast were abolished during the year, so that examinations were held in the elementary stages only of Perspective, Principles of Ornament, and Modelling. These elementary stages have been since abolished, so that for the future all examinations will be advanced art examinations.

The results gained in the elementary stages of the following subjects were as follows:—

Perspective,	...	...	...	13
Principles of Ornament,	...	...	...	10
Modelling,	...	...	...	8

Of these nineteen obtained the mark "First Class."

In the advanced art examinations the following were the results :—

Anatomy,	...	...	...	4
Antique from memory,	...	...	...	2
Drawing from Life,	...	...	12	
Historic Ornament,	...	...	3	
Advanced Perspective,	...	...	3	
Geometrical Drawing (Art),	...	...	18	
Architecture,	...	...	1	
Drawing from the Antique,	...	...	9	
Painting Still Life,	...	...	5	
Freehand,	...	...	30	
Shading from the Cast,	...	...	24	
Model Drawing,	...	...	37	
Principles of Ornament,	...	...	4	
Painting Ornament,	...	...	5	
Design (Elementary),	...	...	4	
Design (Advanced),	...	...	1	
Modelled Design,	...	...	8	
Modelling from Life,	...	...	1	

Of these two obtained the mark "Excellent" in Drawing from the Life, and thirty-seven gained "First Class."

The total number of works accepted for certificates was thirty-one. Of these seven were for the Art Master's Certificates, Groups I. and II.

The results of the Science classes in Descriptive Geometry and Building Construction are as follows :—Descriptive Geometry, 16; Building Construction, 2. It is a matter for regret that no students have been presented for examination in Machine Drawing or Building Construction from the evening class, although the attendance has been quite as good as in former years.

In the National Art Competition the School gained one Silver Medal, seven Bronze Medals, and fifteen National Book Prizes.

The Silver Medal was gained by William Whelan for a set of eleven sheets of drawings from chairs in the Museum and elsewhere, illustrating their development as regards form and ornamentation. The Bronze Medals were gained by Louisa Deane, design for Lace Opera Mantle; Beatrice M. Elvery, modelled design for Tobacco Jar; Louisa Evans, model of an Animal from the Cast; Anna L. Jones, design for a Portière; John McDermott, Ornament modelled from the Cast; Thomas Mathers, model of a Figure from the Antique; and Emily Scott, Flowers painted from Nature.

The number of students who were awarded prizes under the Local Prize Scheme are as follows :—

Freehand,	...	...	...	...	27
Model Drawing,	...	...	...	...	29
Perspective,	...	...	...	...	8
Elementary Principles of Ornament,	...	...	...	...	6
Elementary Modelling,	...	...	...	...	5
Descriptive Geometry,	...	...	...	...	7
"Excellent" in Drawing from Life,	...	...	...	...	2
"Accepted" for Art Master's Certificate,	...	...	...	...	7
For Sets of Works,	...	...	...	...	28

Free Studentships were awarded to fifteen students, either on account of having gained the Art Class Teacher's Certificate, or for success in the National Competition, &c.

Miss Beatrice M. Elvery was awarded a Queen's Prize for having taken tenth place in the kingdom, in the examination in Drawing from the Life.

The following students were awarded the Royal Dublin Society's Scholarships of £10 each : Evelyn Egan, Edith Emerson, Mary Hunter, Louisa Deane, and Joseph Hanrahan.

His Excellency the Lord Lieutenant most kindly made arrangements by which over 100 students of the day and evening classes were enabled to visit the Arts and Crafts Exhibition. Opportunity was taken on both occasions of their visits to point out to the students the principal features of the exhibits.

A selection from the works of students belonging to the School was sent to the Paris Exhibition by the Department of Science and Art. The International Jury awarded a Silver Medal to this School; a mark of appreciation which is very gratifying.

In March last Sir Thomas Wardle, Chairman of the Silk Association of Great Britain, visited this School, and urged us to send some designs to the Woman's Exhibition, Earl's Court, London. Accordingly, we sent fourteen frames of designs: seven for silk textiles and seven for lace. Six prizes were offered by the Ladies' Committee for silk dress, silk hanging, and for lace design; and all the Schools of Art in the kingdom were invited to compete. We gained three out of the six prizes offered, that is, the first prize for silk dress, which was won by Emily Scott; and both first and second for lace, which were won by Alice Jacob and Emily Scott.

In the competition for the Taylor Scholarship and Prizes, the Scholarship of £50 was again awarded to William Orpen; sums of £25 and £10 to Henry Chancellor; £10 for a modelled figure of Bacchus to Beatrice M. Elvery; and £5 for the same subject to Albert Power.

The students gained ten prizes for designs for lace, wood-carving, and metal-work, at the competition in connection with the Art Industries Section of the Royal Dublin Society, held at the time of the Horse Show, Ball's Bridge.

In the competition for the Silver Cup presented by Her Majesty the Queen to the Royal Dublin Society, Miss Edith Emerson was employed by Messrs. Johnston & Co., Grafton-street, to make the design submitted by that firm. Although Messrs. Johnston & Co. were unsuccessful in gaining the order, yet the Committee of the Royal Dublin Society awarded a sum of three guineas to Miss Emerson, in consideration of the excellence of her design.

The class for design has been fully occupied during the year; indeed, at no period since its inception has there been such a demand for designs as during the past session. There has been some difficulty in meeting all the demands made upon the energies of the class. Drawings and designs, chiefly for lace, were made for Messrs. Walpole, Bros., for the Congested Districts Board; for the Convent of the Good Shepherd, Limerick; for the Beechmount Home Industries, Ballymote; and amongst others for the Hibernian Lace Company. For this firm quite a large number of designs were made. I need hardly say that this practice in designing has been highly beneficial to the students.

The Drawings of Ceilings in old Dublin houses, made by Mr. Whelan, and for which he obtained a National Prize last year, have been purchased by the Victoria and Albert Museum, South Kensington. I trust that Mr. Whelan may continue to make records of these most valuable examples of old Dublin art.

Misses E. Draper and Hurne were employed by the British Insulated Wire Co., for some months in making plans, maps, &c., connected with electric lighting.

An experiment was tried in the month of July by giving a summer course of instruction in Freehand Drawing, Geometrical Drawing, and Elementary Design, to lace and embroidery workers, and National School teachers. The course extended over three weeks, and the result surpassed our expectations. There were thirty-eight applicants; but only twenty-six of these complied with the requirements, and were admitted to the course. It commenced on the 9th July. The classes were taught by Miss Jacob and Mr. Luke, and the students attended both by day and evening. Nothing could exceed the diligence and attention exhibited by the students. At the conclusion certificates were given to those who had attended. The success of the experiment encourages me to express the hope that we may be permitted to hold another and more extended course next summer.

Miss Emerson and Miss Cameron were selected to attend the summer course of instruction given at the Royal College of Art, and Miss Jacob and Mr. Whelan were permitted to visit the Victoria and Albert Museum, South Kensington, and make studies therein.

Greatly to our regret Miss Emily Scott resigned the pupil-teachership in July. I must bear testimony to the great success which attended Miss Scott's work in the School; she had a natural aptitude for teaching, which was productive of good results. Miss Emerson has been appointed in her place.

The course of twenty lectures on Anatomy was given by Dr. Fraser, and was attended by thirty-one students. The twelve lectures on Architecture were given by Mr. Cecil Orr, and were attended by thirty-two students.

The annual exhibition of students' works took place at Christmas, and was visited by 6,298 persons, of whom 5,000 were day, and 1,298 evening, visitors.

The Landscape class was divided into two sections; one met at Mr. Blackburne's, Rathfarnham. Our thanks are due to Mr. Blackburne for permission to study in his extensive grounds. The other met at the Royal Botanic Gardens, Glasnevin. The total numbers attending the class was 41.

The School of Art Sketching Club did very good work throughout the year. As usual, we exhibited a selection from the works at Christmas.

The results of the branch class at the Presentation Convent, Thurles, were as follows:—

Descriptive Geometry, ...	...	...	3	passed.
Freehand Drawing, ...	...	...	5	"
Model Drawing, ...	...	...	2	"
Geometrical Drawing (Art), ...	...	...	4	"
Perspective, ...	...	...	2	"
Shading from the Cast, ...	...	...	4	"

Six works were accepted for the Art Class Teacher's Certificate.

To my assistants, who have so earnestly devoted themselves to the interests of the School, my best thanks are due.

(Signed), JAMES BRENAN.

APPENDIX VIII. TO DIRECTOR'S REPORT.

REPORT OF THE KEEPER, ROYAL BOTANIC GARDENS, GLASNEVIN.

Herewith I beg to submit to you my Report on the condition of the Royal Botanic Gardens during the period ending 31st March, 1901.

Number of Visitors.

There has been a large increase in the number of visitors to the Gardens over the previous fifteen months. There has been an increase in the attendance in twelve months, and a decrease in three months. There was a decrease of 4,068 in February, of 7,332 in March, 1900, and of 2,490 in August, giving a total decrease of 14,330 for those three months.

The increase is most marked in May, June, July and September, 1900, and March, 1901; amounting to 7,605 in May, 14,071 in June, 9,832 in July, and 30,150 in September. The increase for the month of March, 1901, over March, 1899, was 3,499, and over March, 1900, 10,826. The total attendance for twelve months ending 31st December, 1900, was 407,770, of which number 264,867 were Sunday visitors, and 142,903 were weekday visitors; being an increase over 1899 of 20,052 Sunday visitors, and 43,104 weekday visitors, or a total increase of 63,156.

The total attendance for fifteen months ending 31st March, 1901, was 457,765, of which number 299,660 were Sunday visitors, and 158,106 were weekday visitors. This represents an increase over fifteen months ending 31st March, 1900, of 75,643.

This result is remarkable, as 1900 has been an exceptionally wet year, the rainfall not only being much greater than in 1899, but the number of days on which it fell being also greater.

	12 months to 31st December, 1900.	15 months to 31st March 1901.
Total number of visitors, ...	407,770	457,765
Sunday visitors, ...	264,967	299,660
Weekday visitors, ...	142,803	158,105
Highest monthly attendance, September, ...	59,625	
Highest weekly attendance, week ending 9th June (Whit-week), ...	20,470	
Highest Sunday attendance, Sunday, 20th May, ...	8,783	
Highest weekday attendance, Monday, 4th June (Whit-Monday), ...	9,030	
Lowest Sunday attendance, Sunday, 30th December, ...	308	
Lowest weekday attendance, Monday, 26th February, ...	23	

Conservatories.

In last year's Estimates provision was made for some alterations and repairs to the Conservatories, all of which have been completed.

Additional ventilators have been put in the cool Fern House. On each side of the passage leading from the Fern House to the Aquatic House small unheated compartments have been constructed, in which a collection of Filmy Ferns is to be placed. This collection at present is in a small house which is not open to the public. Several of the Tree-ferns were supplied with new tubs. All broken glass in the roof of the large Palm House has been replaced.

The roof of the Orchid House is decaying in places, and some of the rafters and sash bars must be renewed. The remainder of the Conservatories are in good order.

Propagating Pits—Stable Range.

The roof of the stove pit has been thoroughly repaired and painted.

Lower Pit.

Some alteration has been made in the heating arrangements of this pit. The boiler and furnace have been removed to the house in plant yard, so that this house, and the lower pit, are now heated by one boiler, instead of by two boilers. So far this arrangement has worked all right.

Upper Pit.

A new iron tank with appliances for heating the water has been constructed, and some bottom ventilators have been provided.

Outdoor Department.

The pressure of work in the Outdoor Department still continues, and several important changes have been carried out.

The trellis work in Clematis class was completed in March, and the collection of Clematis extended.

The Rose Garden has been completely remade, and remodelled. Formerly the various classes of Rose were more or less scattered through each other. They have now been classed, and planted in separate groups, Moss Roses, Tea Roses, Hybrid Perpetuals, Climbing Roses, China Roses, and species of Rose, having all separate beds. The beds were remade where necessary, the old soil being removed, and replaced with fresh material. The Collection of hardy *Nymphaeas* in the pond has been largely added to, most of the best new varieties having been purchased. The ordinary white Water Lily, and other plants, have been cleared from a

large portion of the upper pond, which has been planted with such of the newer sorts as were sufficiently strong to plant out. These were much admired by visitors, and as they flowered profusely, they formed one of the most attractive features in the Garden during the past season.

The Azalea beds near the pond were all remade, and replanted. Owing to the amount of lime in the soil, and in the water, the Azalea and Rhododendron beds require remaking, and new material, every five or six years.

The collection of species and varieties of *Lilium* has been moved to other quarters. Lily disease made its appearance some few years ago, and did much damage to many species which formerly grew well, and I hope by changing their position, and by giving them fresh materials in which to grow, that this may be got rid of. A collection of new bulbs has been purchased to replace those which failed. Some damage was done to the river bank by floods, which followed the heavy rains in the latter end of November.

The lower field, which is below the level of the river, is constantly liable to injury by floods; therefore little use has been made of it. As it is in a picturesque part of the Garden I hope to be able to open it for the use of the public. I have commenced raising the level of the field to that of the river bank, but it will be a considerable time before I can get this work completed. A large amount of gravel has been raised from the Pinetum, and from other places, where the trees were failing owing to the gravel coming too close to the surface.

New Field.

I have commenced work in the field which was last year added to the Garden. A partition railing has been erected dividing the field into two. One part has been broken up, and partly manured and cropped, to clean it. The ground was in bad condition: full of weeds and wire-worm. As soon as it is in good order the tree nursery, some of the economic classes, the vegetable classes, and other minor departments, will be transferred to it. I have made a roadway from the back entrance. Until the whole field has been properly fenced nothing definite can be done with it, as dirt and rubbish of every description is thrown through the wire fence, and trespassers cannot be excluded.

Arboretum.

The following duplicate trees have been taken down:—One Lime, one Birch, one *Pinus sylvestris*, one *Pinus laricio*. These were in unsuitable positions, and were injuring the young trees around them. One of the large twin Ash trees at the corner of the wild garden was blown down by the storm on the night of the 9th December. Fortunately, it did no damage in falling. Trenches were opened round some of the Conifers which were in bad condition; the gravel and bad soil were taken from under them, as far as possible, and fresh soil was given to them. The growth which they have since made has been strong and healthy. Any young trees fit for transplanting have been transferred from the nursery ground to their permanent quarters in the garden.

Purchase of Plants and Seeds.

I have given as much care and attention as possible to acquiring rare and interesting plants by purchase, and have added 1,690 plants to the collections by this means. They have been purchased from all available sources, home and foreign. Amongst them are several plants which I have been endeavouring for a long time to obtain. The sum expended on purchase of plants and seeds was £304 10s.

Number of plants purchased, 1,690.

	£ s. d.
Orchids, Ferns, Palms, and indoor plants,	150 15 6
Hardy plants, trees, and shrubs, ...	95 16 6
Seeds, bulbs for pots, beds, and planting in grass, ...	57 18 0
	<hr/>
	£304 10 0

Amongst the rarer plants purchased are the following:—*Acrida Veitchii*, *Ceanothus Pendleri*, *Celmisia Munroi*, *Cirrhopteratum Kordossii*, *Cirrhopteratum Rothschildianum*, *Cochenia Rosiana*, *Costus alboscapus*, *Cratægo-Mespilus Dardari*, *Cymbidium Gammieanum*, *Cycnoches maculata*, *Cytisus Heuffeli*, *Echinocactus ornatus*, *Echinocactus pilosus*, *Epidendrum purpurachilum*, *Eucryphia cordifolia*, *Fourquaria columnaria*, *Gaultheria furiens*, *Gaultheria antipoda*, *Gentiana Martini*, *Hamamelis mollis*, *Iris Heldreichii*, *Iris Tauri*, *Iris Tubergiana*, *Libocedrus macrolepis*, *Magnolia longifolia*, *Magnolia salicifolia*, *Masdevallia ecuadoriana*, *Nymphaea William Falconer*, *Phaius flavus*, *Rhododendron kamtschaticum*, *Thlasiantha dubia*.

Exchange of Plants and Seeds.

Numerous additions have been made to the collections, and many rare plants have been obtained by means of exchange and by gift. I have received generous assistance from private growers, from nurserymen, and from the Directors of Botanical Gardens. I have to acknowledge with grateful thanks the invaluable contributions which have been received from the Director of the Royal Gardens, Kew. Amongst the plants from Kew were many which could not have been obtained from other sources. H. J. Elwes, Esq., of Colesborne, presented a nice lot of rare plants, which I selected in his garden last September. One of the most valuable sets of plants ever received at Glasnevin was presented by Messrs. James Veitch and Sons, of Chelsea, consisting mainly of a selection of hybrid Orchids raised in the nurseries of that firm, and including many valuable varieties. Specially interesting and valuable donations were received from—Mr. C. Curtis, Penang; Herr Max Leitchthii, Baden Baden; Miss E. Willmott, Warley-place; W. E. Gumbleton, Esq., J.P., Belgrave; Major Prain, M.B., Calcutta; R. I. Lynch, Esq., Cambridge; Lord Ilchester; Mr. T. Smith, Newry; James O'Brien, Esq.; Thomas Acton, Esq., B.L., Wicklow; Messrs. H. Low and Co., Bush Hill Park; Messrs. F. Sander and Co., St. Albans; Earl of Ducie, Tortworth; Sir Trevor Lawrence, Bart., Dorking.

The number of donations to Garden was 152, coming from 92 donors, living in the following countries:—England, 35; Ireland, 23; Germany, 6; Italy, 4; France, 3; India, 3; Austria, 2; Switzerland, 2; Holland, 2; Russia, 1; Spain, 1; Roumania, 1; Servia, 1; Norway, 1; Portugal, 1; Australia, 1; Penang, 1; Brazil, 1; Africa, 1; America, 1; Scotland, 1.

Donations to Garden:—Plants, 722; Seeds, 1,825 packets.

Donations from Gardens:—Plants, 818; Seeds, 3,656 packets.

Amongst the rare plants received by exchange are the following:—

Aesculus indica, *Aglaonema Curtissii*, *Anacyclus formosus*, *Aplopappus ericoides*, *Arisaema Bakeriana*, *Arundina chinensis*, *Asplenium filiforme*, *Aster Picoli*, *Aster Porteri*, *Castanopsis chrysophylla*, *Cycnoches Loddigesii*, *Cydonia sinensis*, *Cypripedium insigne*, *Sanderia*, *Cyrtopera plantaginea*, *Dendrobium bellatulum*, *Dendrobium Oeclogyne*, *Drymoria diversifolia*, *Hazardia decolorata*, *Hidalgoa Werkleii*, *Helichrysum Guiztizii*, *Iris urmiana*, *Juglans rupestris*, *Leucanopteris carinosa*, *Masdevallia burfordiense*, *Nephrodium Stenii*, *Peristeria aspersa*, *Phaius Blumei*, *Rhododendron fulgens*, *Scopolantrum nigripes*, *Senecio tabularia*, *Sparaxis pulcherrima alba*, *Spiraea Aitchisonii*, *Statice sinense*, *Trevoria chloris*, *Tulipa Borszczowii*, *Tulipa Korolkowi*.

Journeys.

In September I went to London, and visited Kew Gardens, and most of the leading plant nurseries. I also visited Mr. H. J. Elwes' rich collection of plants at Cirencester, and Sir Trevor Lawrence's collection of Orchids at Dorking. From both of these gardens I got useful and valuable additions to the Glasnevin collection.

GENERAL.

Water Supply.

Although the period reported on has been abnormally wet, the water pressure was very poor, and quite insufficient for the requirements of the garden. There is not sufficient pressure to reach the gallery of the

Palm House during the daytime, and at no time can water be taken from the mains for the houses, and for the outdoor departments, simultaneously. I again urge the necessity of arranging for a separate supply of water for the outdoor department, either from the canal, or by pumping from the river.

House for Tropical Ferns.

A house for Tropical Ferns is much required. The growing collection of Orchids requires all the space in the Orchid House, one compartment of which is now given up to Ferns.

Refreshment Rooms.

The neighbourhood of Glasnevin is very badly supplied with Tea-rooms, or other similar places, where tea or lunch can be obtained. There is no such place nearer than Phibsborough, one mile from the Garden. The cottage adjoining the garden could easily be converted into tea-rooms, and the situation is very suitable.

Night Fireman.

Treasury sanction has been obtained to employ an additional fireman, and since 1st November two firemen have been on the staff. One of these is employed on night duty, the other on day duty, changing each week. This is a great improvement on the old system, and makes it much easier to keep the night temperature in the houses properly regulated.

Entrance Gates.

The new entrance gates have been completed, and entrance and exit turnstiles have been provided. From 1st January, 1900, the entrance turnstiles have been in use, so that the attendance has been automatically recorded, and so freed from any element of doubt.

Laboratory.

The Laboratory has been largely used. The gardening class was held there from February to May, and the Professor of Botany of the Royal College of Science used it regularly during the summer months for the ordinary Botany class of the College. He also held a special class for Veterinary students in it during the latter months of 1900.

(Signed), F. W. MOORE.



DEPARTMENT OF AGRICULTURE AND TECHNICAL
INSTRUCTION FOR IRELAND.

REPORT

OF THE

BOARD OF VISITORS

OF THE

SCIENCE AND ART MUSEUM, THE NATURAL
HISTORY COLLECTION, AND THE ROYAL
BOTANIC GARDENS, GLASNEVIN.

TO THE SECRETARY, DEPARTMENT OF AGRICULTURE
AND TECHNICAL INSTRUCTION FOR IRELAND.

SIR,

The Board of Visitors having inspected the several sections of the Dublin Museum and the Royal Botanic Gardens, have the honour to submit the following as their Report for the fifteen months ending 31st March, 1901:—

MUSEUM.

The popularity of the Museum is indicated by the large number of visitors, the number of those passing the turnstiles for the fifteen months ending the 31st March last amounting to 519,248.

The extension of the hour for closing on two nights in the week from 9 o'clock to 10 o'clock, p.m., seems to have been duly appreciated by the public.

Guides.—The increasing sale of the Short Guides to the contents of the Museum evinces the interest taken in the collections, it would be desirable to have the large Guides completed as soon as possible, and extra assistance should be given for their compilation. The Index to the Short Guide will be a great improvement.

ART AND INDUSTRIAL COLLECTIONS.

Egyptian Room.—The classification is now almost completed by Miss Murray, a pupil of Dr. Flinders Petrie, by whom all the objects have been carefully labelled and re-arranged; modes of burial, amulets and small objects, prehistoric pottery and casts of sculpture being placed in order, thus enabling those who have not the opportunity of visiting other collections to obtain a clear idea of ancient Egyptian civilisation.

Oriental Art.—Amongst the objects on loan should especially be noticed the almost unique collection of Brass and Copper work from Llassa, lent by Major Chevenix Trench. Should any portion of this collection be disposed of it would be most desirable to secure some specimens for permanent exhibition in the Museum.

Architecture.—A copy of Donatello's Cantoria (now in the Cathedral Museum at Florence), which was exhibited at Paris in the Italian Section of the Exhibition, has been secured, and cannot fail to attract considerable interest.

Glass, Pottery, and Porcelain.—The additions to this section during the past year include a specially valuable collection of Persian Tiles, and a very beautiful glass lamp, from a Mosque at Cairo, which formed portion of the Myers Collection.

Some most interesting bits of modern work were purchased at the Paris Exhibition illustrative of the state of artistic work in Glass, Pottery, and Porcelain, on the continent of Europe, at the close of the nineteenth century.

Silver.—A few specimens of silver work have been added to the collection during the year; but to be of real value this collection requires considerable extension, and fine specimens should be secured when possible, even if very high prices have to be given.

Lace Room.—The Lace Collection demands further attention, with the object of increasing the specimens of really fine work, in order that workers may see what has been done in the past, and by emulating previous work, strive to attain for Irish lace the highest character. The daylight in this room is quite inadequate, and should be much stronger.

Russian Peasant Industries.—This collection is very interesting, showing, as it does, the naturally artistic temperament to be much superior to that developed under amateur instruction, and also the results of special workshop training, where schools have been established by the land-owners.

Irish Architecture.—The cast of the Cross at Monasterboice is now complete, the panels at the base, which were moulded when uncovered last year, having been added. Attention was called in the last Report to the importance of securing casts of Irish Architecture and other Antiquities of historical interest in this country, and it is satisfactory to know that something is being done in this direction.

Ethnological Room.—The importance of classification and arrangement in this department is most obvious. Something is being done, but increased assistance is urgently required, and should not be delayed.

Attention was called to this last year, and the staff should be increased in this department, as well as in other departments of the Museum, to enable the work to be carried on more rapidly.

Annexe.—It is much to be hoped that the rebuilding of this will be taken in hand, as extra room is required in many of the

departments, and for some years past the attention of the authorities has been called to the state of this building by the Visitors.

COLLECTION OF IRISH ANTIQUITIES.

This branch of the Museum was dealt with so fully in last year's Report that it does not need much comment in the present one. It is assuming a satisfactory state, and shows evidence of much care having been spent on its arrangement during the period under review. Here, as elsewhere in the Museum, it is evident that the problem of how best to provide additional space will soon have to be seriously considered. Nothing has been done as yet towards appropriating a portion of Room I. as an office, so as to make the rest of it available for exhibitional purposes, and the public have no access to it; but Room IV. (the North-western Pavilion) has for a considerable time been fully open to them, and now forms one of the most attractive portions of the Museum.

The intervening "Long" Room (No. III.), which is the second of those appropriated to the Royal Irish Academy's Collection, is now in fair order. Its contents are well exhibited; but much has still to be done in arranging and labelling them.

Some interesting items have been added, but the acquisitions under the "Treasure Trove" Regulations (under which the Royal Irish Academy acts for the Crown in the public interest) have not been as numerous and varied as in former years.

A small, but important collection from the Museum of the Royal Society of Antiquaries of Ireland at Kilkenny has recently been deposited by that body in the collections of the Royal Irish Academy in this Museum.

In the chief Room, No. IV., which is to be devoted to Christian Antiquities, the new cases lately provided appear to be satisfactory, and worthy of the precious objects of early Irish Art which they contain. The lighting of this room in the evening, however, requires improvement.

The Annual Meeting of the Royal Archaeological Institute of Great Britain and Ireland, which was held in Dublin in July last, was an event of special interest in connexion with the Museum. It was the first occasion on which this Society—though bearing "Ireland" in its title—came to visit this country. The Institute received a worthy welcome from the municipal authorities, and from kindred antiquarian bodies here, and the meeting afforded an attractive opportunity for many leading English archaeologists, including several members of the Council of the Society of Antiquaries of London, to acquaint themselves with some of the more important antiquities of Ireland. With the sanction of the Department, the Museum was, for the night of July 19th, placed at the service of the Royal Irish Academy and the Royal Society of Antiquaries of Ireland, on whose invitation the members of the Institute were entertained at a very successful conversazione, being received by the Earl of Rosse, K.P., President of the Royal Irish

Academy, and of the meeting. The *Archæological Journal* (December, 1900, Vol. 57, p. 326) gives a full account of the event, and prints the more important papers read at the several meetings held in Dublin. The Council of the Institute record that "A most enjoyable evening was spent, and every facility afforded for the inspection of the famous collection of Irish Antiquities." They add that "Mr. G. Coffey, Curator, gave invaluable assistance in exhibiting and describing the objects placed under his care, and they express their thanks to him and to other Irish Antiquaries who helped to make the meeting such a great success. Many of the members expressed the gratification afforded to them by an inspection of the Museum collections, and their satisfaction at the handsome manner in which these collections have been housed. Amongst the papers published in the *Archæological Journal*, one by the late Miss Margaret Stokes, Hon. M.R.I.A., affords valuable information on the Signs of the Zodiac shown on the lowest series of panels of the Monasterboice Cross.

The Visitors feel bound to record their regret that His Majesty's Government have not as yet succeeded in obtaining for this Museum the important find of Gold Objects, from the North of Ireland, purchased by the British Museum, and they hope that the objects in question may ere long be restored to Ireland, to have a permanent and appropriate resting place in our National Museum.

MINERALOGICAL SECTION.

The most valuable additions to the Mineralogical Collection during the past year consist in the fine specimens of copper and iron ores, and coal, added to the Irish Collection. These had previously been exhibited at the Royal College of Science, but are now more easily accessible to the general public.

The Irish Collection is now completely labelled, including the new specimens mentioned above.

The large geological map has been repainted, and details brought up to date.

Although the suggestion made in last year's Report for the employment of a permanent assistant to the Professor has not been acted upon, the work has been facilitated by the temporary employment of Mr. St. John Lyburn, whose services were, fortunately, available.

Attention is again called to the increasing difficulty of accommodating the collection, which is yearly growing, and the injury which results to the collection from the free admission of soot and dust through the roof of the temporary building, which is a part of the Annexe.

ZOOLOGICAL COLLECTIONS.

A great deal of work has been done during the past fifteen months in the arrangement of the collections; but in many instances this work has been stopped owing to the delay in the alteration of the cases. Thus, in the Upper Gallery, which is

devoted to the display of the Invertebrates, the re-arrangement of the upright cases is still in an unfinished state, and no specimens can be placed in these cases until the entire series is ready.

On the Lower Gallery, progress in arranging the collection of Birds has come to a standstill owing to the delay in adapting the old cases. This work was commenced several years ago, but is still only in progress. It is most desirable that it should be completed as soon as possible.

At least two additional large cases are required for the Mammals.

Progress has been made in the arrangement of the Ussher Collection of the Eggs of Irish Birds, which forms one of the most important additions to the Zoological Museum during the past year. Excellent work has been also done in the various sub-sections, such as among the Insects, Shells, Reptiles, Fish, &c.

A good deal of attention has been attracted by a collection, which has recently been added, of the Birds alluded to in Shakespeare's Plays as used in hawking.

The stone stairs leading to the first floor of the Museum are so much worn away as to be, in places, even dangerous. The Visitors would call the serious attention of the Department to this state of things, which certainly calls for immediate care.

The Annexe which contains the important collection of Fossil Animals is in a very bad state. The greater part of the roof leaks in wet weather, the building itself is little more than a shed, formerly used for the exhibition of cattle. It covers a considerable area of ground, upon which a permanent building of stone or brick could be erected. While the Visitors do not see their way, for the present, to do more than point out the necessity for such a building, they feel bound to call the attention of the Department to the extreme insecurity of the present shed. The store shed which adjoins the Annexe is also in a wretched and insecure condition.

THE BOTANICAL AND ECONOMIC COLLECTIONS.

The importance of these collections has been greatly increased during the period covered by this Report, in consequence of the intimate relations into which the Museum has been brought with the newly-established Department of Agriculture and Technical Instruction; and it seems probable that in the immediate future this importance may be more fully developed.

The testing of seeds for the Department has been added to the duties of the Keeper of these collections, and, therefore, it is important that further provision should be made for the efficient carrying on of the ordinary work of the botanical division.

In the Herbarium the chief work which has engaged the attention of the staff has been the mounting of the important De Tabley Collection of Dried Plants, the presentation of which was mentioned in the last Report.

In this department additional book-cases are much needed. At present many volumes are stored behind a piece of canvas,

where they are not properly protected from dust, and are, therefore, daily being injured, and where they are, moreover, less useful for immediate reference than they ought to be. As regards the Economic specimens the utility of the collections to the non-scientific visitors has been increased by the addition of the popular names. There have not been many specimens added during the period to which this Report refers. The two main causes of this have been want of space, and want of additional assistance.

So far as the want of space is concerned, the narrowing of the cases, which is now in course of being carried out, will, to a considerable extent, meet this difficulty, and as to the want of assistance, that point has been already referred to. It is right to point out that some of the wall-cases have not yet been provided with drawers. Suitable slide cabinets are required for a valuable collection of coloured diagrams, which are at present merely stored, and that, too, in such a way as not to be readily available for students.

The general work of the Botanical and Economic Sections has been carried on during the period now under review in a perfectly satisfactory manner so far as the resources at the disposal of the Keeper permitted.

ROYAL BOTANIC GARDENS, GLASNEVIN.

The Royal Botanic Gardens were visited, during the fifteen months ending the 31st March last, by 420,259 persons, of whom 277,023 were Sunday visitors. These large numbers sufficiently indicate the interest taken in the Gardens by the public. The conduct of the visitors has been exemplary, and no material damage has been done to the shrubs or flowers. The necessity for a Refreshment Room has been very strongly shown, the nearest attainable Refreshment Room being a mile distant from the Gardens. If a Tea House were built on the site of the cottage (lately acquired) by the side of the entrance gate, there is little doubt it would be highly appreciated. Refreshments should be limited to tea and coffee. There should be no entrance within the Gardens to the Tea Rooms. The site proposed is opposite to the tramway.

The houses and grounds appear, and are reported by the Director, to be in excellent order. The lately-erected Succulent House has proved itself to be well adapted for this group of plants. The Ferns from the Tropics are as yet unprovided for; the specimens at present are dispersed among the Orchids. If a house were built to suit these beautiful plants the range of glass houses in the Gardens would be complete.

A further portion of the hilly ground, alongside the existing Rock Garden, has been taken into cultivation, and in a very short time the collection of Alpine Plants will prove an interesting feature of the Gardens.

Two important additions have been made in the Herbaceous Collection, the establishment of an extensive Rose Garden, which contains a series of the species of this favourite flower,

with a selection of some of the more striking varieties. This Rose Garden is surrounded by a tall wire fence covered with a collection of species of Clematis. The other notable addition is the planting of the pond with a collection of the species and varieties of the hardy Water-lilies, the growth and flowering of which have already proved how well they have adapted themselves to our climate.

The Visitors would call the earnest attention of the Department to the pressing need of a sufficient water supply to the Garden and its numerous houses. At present there is a supply, by arrangement, from the well-known Vartry source. While this water is perfect so far as quality is concerned, the supply leaves much to be desired: the pressure is not sufficient to enable the water to reach the upper portions of the Palm House, and in the hot weather, when watering is most needed, the supply is at its lowest. The cost of the Vartry water prevents its being used for the plants throughout the grounds. As the very existence of the Gardens depends on their having a good supply of water, the importance of an inquiry as to how a further supply can be obtained need scarcely be insisted on. It would appear possible that the River Tolka might be utilized for working a ram. By this means one or more tanks, to be erected at the rear of the Palm House at the highest possible level, could be supplied with water for distribution throughout the grounds. Or if the current of the Tolka proved not powerful enough to work such a ram, the neighbouring canal would afford a sufficient supply.

The large field recently acquired, the possession of which is of the greatest value to the Gardens, until surrounded by a wall of sufficient height to keep off trespassers, cannot be fully utilized. One-half of it has been screened off by a temporary wire fence, and some attempts have been made to get the ground into heart. When walled in, this plot will serve the most important part of acting as an experimental and growing garden, and so enable the portions of the Gardens at present devoted to such purposes to be made more attractive. A step in this latter direction has already been taken in the field along the Tolka, at one time used for experimental purposes. Its level has been in part raised, and the banks along the river have been planted with a series of hardy Bamboos, which promise well.

J. K. INGRAM,

President.

May, 1901.

DEPARTMENT OF AGRICULTURE AND TECHNICAL
INSTRUCTION FOR IRELAND.

REPORT

OF

THE COUNCIL OF TRUSTEES

FOR THE

NATIONAL LIBRARY OF IRELAND

FOR THE YEAR 1900,

AND THE QUARTER ENDED 31ST MARCH, 1901.

TO THE SECRETARY OF THE DEPARTMENT OF AGRICULTURE AND
TECHNICAL INSTRUCTION FOR IRELAND.

SIR,

As Chairman of the Council of Trustees, I have the honour to submit the following Report of that body for the period of fifteen months ended 31st March, 1901.

In April, 1900, the Trustees were informed that the Administration of the Library had, in common with that of the other Science and Art Institutions in Dublin been transferred from the Science and Art Department to the new Department of Agriculture and Technical Instruction for Ireland.

During 1900 the Library was open to the public on 293 days. The attendances of readers numbered 148,405, a record lower than that of 1899, the preceding year, by 6,473, but exceeding that of all other years in the history of the Library.

		Daily average.
Gentlemen, Morning	Attendance (10 to 6)	101,630 347
Evening	" (6 to 10)	37,089 126½
Ladies, Morning and Evenings	(10 to 10)	9,686 33
		<hr/> 148,405 506½

The decline in attendance may, in part, be due to the war. Other public institutions have been similarly affected.

During the quarter ending March 31st, 1901, the Library was open to the public on 76 days. The attendances numbered 40,763.

Gentlemen, Morning Attendance (10 to 6)	27,850
Evening " (6 to 10)	10,318
Ladies, Morning and Evening, (10 to 10)	2,595
	40,763

This gives a daily average attendance of 536.

During 1900, 3,185 volumes have been catalogued and made accessible to readers. Of these 728 were folio, 369 quarto, and 2,088 octavo and smaller sizes. A grouping by class of these volumes is given in the Appendix.

During the quarter January–March, 1901, 826 volumes have been catalogued and made accessible to readers.

Statistics of the Binding done for the Library, of the Borrowing by members of the Royal Dublin Society and by certain officers of the Science and Art Institutions, are furnished in the Appendix.

Among the more notable special donations of the past year are: The numerous publications of the British Museum, presented by the Trustees; the *Drogheda Independent*, 1889 to 1899, presented by Mr. Michael A. Casey, the Editor; the *Catalogue of the John Rylands Library*; the *Catalogue of Early English Books to 1640 in the John Rylands Library*, presented by the Governors; the *Reports and Proceedings* of the Australasian Association for the Advancement of Science, 1887–1898, presented by the Association; Dauhentown's *Planches Enluminées*, a magnificent, complete set in ten volumes, of 108 coloured plates, chiefly figures of birds, illustrating Buffon, presented by Mr. Wellington Gray, of Killiney (now of Athlone); the MS. from which the four published volumes of William Thompson's *Natural History of Ireland* were completed (this manuscript is contained in five bound quartos, besides a quantity of MS. not arranged for binding), presented by the brother of the Author, the late James Thompson, J.P., of Belfast; fifty volumes of the *Dublin Gazette*, from 1834 to 1869, presented by the Irish Land Commission; the *British Case in the Venezuelan Arbitration*, presented by the Foreign Office; five volumes of the publications of the Oriental Translation Fund from the India Office; English newspapers from the Royal Irish Academy, comprising *Times*, 1838 to 1852 (41 volumes); *Standard*, 1839 to 1852 (27 volumes); *Morning Chronicle*, 1838 to 1852 (31 volumes); *Globe*, 1836–1852 (34 volumes); and 119 volumes of the *London Gazette*, from 1802 to 1853; an Alhambra bound in half morocco, filled with photographs of cromlechs, castles, and churches in County Clare, from Mr. T. J. Westropp, presented to the Library in 1898, and enlarged and indexed by him in 1900; *La Guerre*, by Mons. Jean de Bloch, six volumes, presented by the author; the following papers, presented by the Fisheries Branch of the

Department of Agriculture: *Field*, 1861-94; *Land and Water*, 1871-94; *Irish Traders' Gazette*, 1889-93; *Irish Sportsman*, 1872-92; *Catalogue of the early printed Books and MSS. in the Public Library of Bristol*, presented by Mr. Norris Mathews, the Librarian; the *fae-simile* of the *Book of Ballymote*, presented by the Royal Irish Academy; a complete set of Sir John Gilbert's *Calendar of the Ancient Records of Dublin*, presented by the Corporation of Dublin. Lists of the names of donors to the Library will be found in the Appendix.

The Trustees regret to state that no increase of the staff of the Library, and no addition to its space has been sanctioned during the year 1900. In the year 1898 the Trustees reported that "certain indispensable pieces of Library work other than cataloguing remained unattempted, while some are suspended or imperfectly executed, because of the insufficiency of the staff of Library officers." In the following paragraphs the Trustees endeavour to state more fully what portions of the Library work are unattempted, or suspended, or imperfectly executed.

(a) In the first place, the superintendence of the Reading Room demands more attention than can be given to it at present. The Librarian and the Assistant Librarians, from time to time visit the room, and are consulted by readers as to sources of information; but, to fulfil this function adequately is very difficult, because during the greater part of each working day only two Library officers are present in the Library, and they have many other matters to attend to. The Trustees point out that the Library working day extends uniformly from 10 A.M. to 10 P.M. during 293 days every year. Thus one of the Assistant Librarians takes up duty every day at 3 o'clock. The vacation of one of the Librarians or his illness leaves but two officers on duty.

(b) The Printing of the Catalogue is the next subject to which the Trustees desire to call attention. The Trustees feel grave concern about the delay in the printing of the titles written for the Joly Collection. The titles for an author catalogue of the books of this collection have all been written (except as regards the Music, and about 600 volumes of pamphlets). But it is not possible to send these titles, which refer to 23,000 volumes, to the press until they have been read and edited; and subsequently the revision of the proof-sheets will imply much arduous work.

(c) Again, the Trustees are anxious to print the full Author and Subject Catalogue for 1894-1900. Of this the copy exists up to date, but the Librarian has not hitherto been able to prepare it for press.

(d) Again, the Trustees desire to print in classified sections the revised Catalogue, now far advanced, of the older part of the Library, for which titles have been accumulating since April, 1899.

(e) The Trustees have more than once in previous reports drawn attention to the need of Shelf-lists in the Library. They consider that examination and revision of the Classification of the books on

the shelves should be undertaken. Not only is this desirable for stock-taking, but there is the further great advantage that since the books of the Library are arranged in the order of subjects the shelf-lists thus prepared would be very valuable Class-lists of a great body of well-selected literature.

(f) The Trustees call attention to the number of isolated prints, maps, etc., in the Library, described in the Report of 1898, which require to be arranged, classified, and catalogued.

(g) Lastly, the arrears in cataloguing new acquisitions are increasing seriously. The special cataloguers at present at work are appointed to write titles for the older part of the Library. Great numbers of books and pamphlets have gathered, and continue to gather, which cannot be catalogued by the present limited staff.

In the early months of 1900 an extremely valuable improvement was made—the hydraulic lift, which had stopped at the ground floor, being extended to the basement. The basement being thus rendered more accessible, it is possible to store there large numbers of newspapers, bound and unbound. But the Trustees regard this use of the basement as only a makeshift. In their Report for 1899 they point out what are the requisites of a newspaper department in a great library, and show that these can be best attained by building the Eastern Wing of the Library according to the Architect's accepted design.

The Trustees would call attention to the statement concerning the Library Building in their Report for 1899, where they indicate in detail the imperfection of the public service of the Library, and the considerable danger to public property implied by the want of ample specialised accommodation for Newspapers, Ordnance Survey Maps, and the Patents Specifications. They are convinced that the efficient working of the Library demands enlarged space, with special provision for such publications.

The Trustees have to report with great regret the death on July 10, 1900, of Mr. John Doran, one of the Attendants in the Library. During the past year they have appointed two Boy-Attendants to fill vacancies on the Staff.

The Librarian was authorized to attend the Annual Meeting of the Library Association, held at Bristol, late in September, 1900. The business of the Library Association is directly concerned with a Librarian's profession, and without attending at least the annual meetings it is difficult to keep abreast of the constant improvements now being made in the management of public libraries.

In November, 1900, Mr. Guthrie Vine, M.A., London, who did valuable work as Temporary Cataloguer in this Library during the preceding three and-a-half years, was appointed Sub-Librarian in the John Rylands Library, Manchester. The post thus vacated was filled by the appointment, on December 14th, of Miss Rosalind Elmes, B.A.

The revision of the older portion of the Catalogue, which was commenced last year, has been progressing steadily. One noteworthy feature in connection with this branch of the Library has been the successful introduction of type-writing for the purpose of cataloguing, it being found possible to type the titles without difficulty direct from the books themselves.

The number of volumes for which titles were written between January 1st and December 31st, was 9,655—a satisfactory total—especially when it is considered that full and accurate subject and author titles were written, and that the nature of the books called for a very large number of subject references.

The number of volumes catalogued during the Quarter ending March 31st was 1,230.

EDWARD DOWDEN,

Chairman, Council of Trustees of the National Library of Ireland.

26th April, 1901.

APPENDIX I.

STATISTICS AND LISTS

Subjoined is a brief general statement of the attendances of readers since the Library was founded in 1877:—

Year	Attendance.	Note.
1878	27,452	... The first complete year of the Library.
1889	51,325	... The latest year of lodgment in Leinster House.
1893	113,888	... The first reliable record after the transfer, in 1890, to the present building.
1894	119,500	
1895	125,500	
1896	136,365	
1897	137,832	
1898	142,218	
1899	154,878	
1900	148,405	

The volumes catalogued and made accessible during the year 1900 may be grouped as follows:—

Bibliography, Library Economy, Book Rarities, and Cyclopaedic works,	...	...	...	...	...	...	...	100
Newspapers,	...	...	...	...	...	...	...	261
Philosophy,	...	...	...	...	...	...	...	47
Religion, Theology, Ecclesiastical History,	...	...	...	...	...	...	...	136
Sociology, Statistics, Political Science,	...	...	...	...	...	...	...	50
Political Economy,	...	...	...	...	...	...	...	32
Law,	...	...	...	...	...	...	...	57
Patent Office Publications,	...	...	...	...	...	...	...	150
Parliamentary Papers,	...	...	...	...	...	...	...	169
Administration,	...	...	...	...	...	...	...	90
Associations,	...	...	...	...	...	...	...	5
Education,	...	...	...	...	...	...	...	57
Commerce,	...	...	...	...	...	...	...	19
Amusements, Customs, and Manners,	...	...	...	...	...	...	...	37
Philology,	...	...	...	...	...	...	...	56
General Science,	...	...	...	...	...	...	...	50
Mathematics,	...	...	...	...	...	...	...	19
Astronomy,	...	...	...	...	...	...	...	24
Physics, Light, Heat, Electricity,	...	...	...	...	...	...	...	34
Chemistry,	...	...	...	...	...	...	...	70
Geology,	...	...	...	...	...	...	...	95
Palaeontology,	...	...	...	...	...	...	...	10
Biology, Anthropology, &c.,	...	...	...	...	...	...	...	28
Botany,	...	...	...	...	...	...	...	40
Zoology,	...	...	...	...	...	...	...	124
Useful Arts in General,	...	...	...	...	...	...	...	14
Medicine,	...	...	...	...	...	...	...	47
Engineering,	...	...	...	...	...	...	...	66
Agriculture,	...	...	...	...	...	...	...	61
Domestic Economy,	...	...	...	...	...	...	...	28
Communication, Commerce, Railway Guides, &c.,	...	...	...	...	...	...	...	42
Chemical Arts, Manufactures and Trades,	...	...	...	...	...	...	...	8
Fine Arts in General,	...	...	...	...	...	...	...	28
Landscape Gardening,	...	...	...	...	...	...	...	9
Architecture,	...	...	...	...	...	...	...	41
Sculpture,	...	...	...	...	...	...	...	26
Drawing and Design,	...	...	...	...	...	...	...	40

Painting,	...	...	...	...	...	...	47
Engraving,	...	...	...	...	...	...	7
Photography,	...	...	...	...	...	...	3
Music,	...	...	...	...	...	...	8
Archaeology,	...	...	...	...	...	...	141
General Literature,	...	...	...	...	...	...	8
English Literature (Essays, Poetry, Periodicals, &c.),	...	...	...	...	...	...	204
German,	...	...	...	...	...	...	49
French,	...	...	...	...	...	...	41
Italian,	...	...	...	...	...	...	26
Latin,	...	...	...	...	...	...	7
Greek,	...	...	...	...	...	...	7
Other Literatures,	...	...	...	...	...	...	48
General History,	...	...	...	...	...	...	14
Geography and Travel,	...	...	...	...	...	...	76
Biography, Genealogy, Heraldry, &c.,	...	...	...	...	...	...	103
Ancient History,	...	...	...	...	...	...	16
History of Europe,	...	...	...	...	...	...	160
" " Asia,	...	...	...	...	...	...	4
" " Africa,	...	...	...	...	...	...	7
" " America,	...	...	...	...	...	...	21
							3,185

Subjoined is the return as to Binding done for the Library during 1900:—

In the binder's hands, Dec. 31st, 1899,	...	486 vols.
Sent to the binder during 1900,	...	3,600 "
		4,086 "
Returned by the binder during 1900,	...	3,636 "
In the binder's hands, Dec. 31st, 1900,	...	450 "

Subjoined is the return as to Binding done for the Library during the quarter January—March, 1901:—

In the binder's hands, Dec. 31st, 1900,	...	486 vols.
Sent to the binder during the quarter,	...	900 "
		1,350 "
Returned by the binder during the quarter,	...	875 "
In the binder's hands, March 31st, 1901,	...	475 "

Subjoined is the account of books borrowed from the Library by members of the Royal Dublin Society, and by certain officers of the Institutions of Science and Art:—

In borrowers' hands Dec. 31st, 1899,	...	181
Lent during 1900 to members of the Royal Dublin Society,	...	1,704
Lent to officers of the Institutions of Science and Art,	...	304
		2,189
Returned during 1900,	...	1,996
In borrowers' hands Dec. 31, 1900,	...	193
With members of the Royal Dublin Society,	...	129
With officers of the Institutions of Science and Art,	...	64
		193

Subjoined is the account of books borrowed from the Library by members of the Royal Dublin Society, and by certain officers of the Institutions of Science and Art, during the quarter January 1, 1901, to March 31, 1901:—

In borrowers' hands Dec. 31, 1900, ...	...	...	193
Lent, Jan. 1 to March 31, 1901, to members of the Royal Dublin Society, ...	...	...	479
Lent, Jan. 1 to March 31, 1901, to officers of the Institutions of Science and Art, ...	...	...	81
			753
Returned, Jan. 1 to March 31, 1901, ...	...	...	583
In borrowers' hands, March 31, 1901, ...	...	...	170
With members of the Royal Dublin Society, ...	...	...	115
With officers of the Institutions of Science and Art, ...	...	...	55
			170

The number of Members of the Royal Dublin Society entitled to borrow, according to the last official list published by the Society, is 345.

Gifts have been received during 1900 from the following private donors:—

Barrett, W. F.	
Bloch, Mons. Jean de, of Warsaw.	
Casey, M. A., Editor, <i>Drogheda Independent</i> .	
College Historical Society, Trinity College, Dublin.	
Cousins, James H., Madely, Sandymount.	
Davies, A. M., 25, Mortimer-street, London, W.	
Dawbarn and Ward, Limited.	
Dix, E. R. McClinton.	
Dowling, E. J. Hughes.	
Duffin, Adam, Belfast.	
Durning-Lawrence, Sir Edwin.	
Ferguson, Mrs., Dalkey, Co. Dublin.	
Foy, George, F.R.C.S.	
Gray, Wellington, late of Druid Lodge, Killiney, now of Athlon.	
Greene, Thomas, M.A., 48, St. Stephen's-green.	
Gunnis, J. W., C.E., County Surveyor, Longford.	
Hagerup, H., Copenhagen.	
Harvey, Thomas W.	
Haslam, Mrs., Rathmines.	
Hogg, Jonathan, B.L.	
Hutton, Henry Dix, M.A.	
Irvine, Mrs. Mary Catherine.	
James, George, 37, Tenby-street, Birmingham.	
Little, Miss L. M., 6, Lower Fitzwilliam-street.	
Lloyd, Henry Demarest, Illinois, U.S.A.	
Magee, Miss, 26, Eglantine-avenue, Belfast.	
Magee, Rev. Hamilton, B.A.	
Magennis, B., 22, Geraldine-street.	
Mathews, Norris, Librarian, Bristol Public Libraries.	
O'Donnavan, Dr. W. J., Rathgar.	
O'Reilly, Professor J. H.	
O'Shaughnessy, Richard, Wilton-place, Dublin.	
Pearsall, W. Booth, M.A.	
Polk, William, M.D.	
Reade, T. Mellard, F.G.S.	
Roche, Dr. Antony.	
Rolleston, Thomas. William.	

Sadler, R., Surrey.
 Scharff, Robert Francis, Ph.D.
 Smith, General John Corson.
 Thompson, Miss S. M., Macedon, Belfast.
 Thompson, the late William, J.P., Macedon, Belfast.
 Urwick, Rev. William, M.A., Hampstead.
 Webb, Alfred, Rathgar.
 Westropp, Thomas Johnson.

Gifts have been received from the following private donors during the quarter January to March, 1901:—

Choate, His Excellency Joseph H., Ambassador of the U.S.A.
 Cole, Professor Grenville A. J.
 Coleman, Rev. Ambrose, o.p.
 Crooke, Major J. J., Rathgar.
 Dutton, Mrs., Dartmouth-square, Dublin.
 Fitzpatrick, S. A. O.
 Green, James, of the Massachusetts Bar.
 Gunnis, J. W., County Surveyor, Longford.
 Hemphill, Rev. Samuel, o.p.
 Lundstedt, Dr. Bernhard, Stockholm.
 Marble, Manton.
 Mathews, Norris, Librarian, Bristol Public Libraries.
 Mayor, Rev. Professor John E. B.
 Meredith, Miss Gertrude Euphemia.
 Monahan, Rev. John.
 Smith, General John Corson, Chicago.
 White, Rev. G. P., Cashel Diocesan Library.

Gifts have been received during 1900 from the following Public Departments, Public Bodies, or Institutions:—

Municipal Council of the City of Dublin.
 Her Majesty's Stationery Office.
 The Education Department.
 Patent Office.
 Office of the Registrar-General of Scotland.
 British Museum.
 Ordnance Survey of England and Wales.
 " " " Scotland.
 " " " Ireland.
 Geological Survey of Great Britain.
 " " " Ireland.
 " " " Canada.
 " " " India.
 " " " United States of America.
 India Office.
 Office of the Agent-General for Queensland.
 Department of the Interior, U.S.A.
 Department of Agriculture, U.S.A.
 Labour Department, U.S.A.
 Bureau of Statistics, Treasury Department, U.S.A.
 Smithsonian Institution.
 London County Council.
 London School Board.
 Royal Dublin Society.
 Society for the Preservation of the Irish Language.
 Cambridge University Syndicate, for Higher Local Examinations.
 Board of Trinity College, Dublin.
 College of Science, University of Tokyo, Japan.
 New South Wales Board of International Exchanges.
 Aspatria Agricultural College.

Association for Promoting Christian Knowledge.
 Australasian Association for the Advancement of Science.
 California University, International Competition for the Phoebe
 Hearst Agricultural Prize.
 Cirencester Royal Agricultural College.
 Department of Agriculture and Technical Instruction for Ireland—
 the Fisheries Branch.
 Dublin Sanitary Association.
 Foreign Office.
 Highland and Agricultural Society of Scotland.
 Indian National Congress.
 Irish Land Commission, Merrion-street, Dublin.
 John Rylands Library Governors.
 Library of Congress, U.S.A.
 London—the Corporation of London.
 Royal Irish Academy.
 Salford Museum and Library Committee.
 Scottish National Gallery Governors, viz., the Board of Manu-
 facturers, Royal Institution, Edinburgh.
 Trinity College, Dublin, the Provost and Senior Fellows.
 Woman's Suffrage Association of Dublin.

The following Societies present publications annually:—

The Royal Society: *Proceedings*.
 The Royal Dublin Society: *Proceedings, and Scientific Proceedings*
 and *Transactions*.
 The Royal Irish Academy: *Proceedings and Transactions*.
 Royal Society of Antiquaries, Ireland: *Journal*.
 The County Kildare Archaeological Society: *Journal*.
 Waterford Archaeological Society: *Journal*.
 Belfast Naturalists' Field Club: *Report and Proceedings*.
 Cremation Society: *Journal*.
 Royal Institute of British Architects: *Journal, Calendar, and*
Transactions.
 Society of Chemical Industry: *Journal*.
 Sanitary Institute: *Journal*.
 Society for the Preservation of the Irish Language: *Report*.
 Royal Academy of Medicine in Ireland: *Transactions*.

The following periodical publications have been presented to the National
 Library of Ireland, either by the publishers, or by private donors, or by
 public bodies:—

Alliance News.
Board of Trade Journal.
Board of Agriculture Journal.
British Medical Journal.
Bulletin, Department of Labour, U.S.A.
Child's Guardian.
Commerce.
Cyclists' Touring Club Gazette.
Drapers' Record.
Free Russia.
Gentlewoman.
Invention.
International Theosophist (formerly *The Irish Theosophist*).
Irish Military Guide.
Kew Bulletin.
Land and Water.
Library Association Record.
New Philosophy.

New Church Magazine.
Propriété Industrielle.
T.O.D.
Travel.
Visitor.

The following Irish newspapers have been presented for some years free of charge, and are filed for reference as bound volumes:—

<i>Athlone Times.</i>	<i>Kildare Observer (Nass).</i>
<i>Belfast News-Letter.</i>	<i>Leinster Express (Maryborough).</i>
<i>Cork Constitution.</i>	<i>Leinster Leader (Nass).</i>
<i>Cork Daily Herald.</i>	<i>Limerick Chronicle.</i>
<i>Cork Examiner.</i>	<i>Mid-Ulster Mail (Cookstown).</i>
<i>Clare Journal (Ennis).</i>	<i>Northern Whig (Belfast).</i>
<i>Drogheda Independent.</i>	<i>Portadown News.</i>
<i>Dungannon News.</i>	<i>Rathmines News.</i>
<i>Evening Herald (Dublin).</i>	<i>Skibbereen Eagle.</i>
<i>Evening Telegraph (Dublin).</i>	<i>Saturday Record (Ennis).</i>
<i>Irish Cyclist.</i>	<i>Sligo Independent.</i>
<i>Irish Field.</i>	<i>Tuam Herald.</i>
<i>Irish Figaro.</i>	<i>Tyrone Constitution (Omagh).</i>
<i>Irish News (Belfast).</i>	<i>Waterford News.</i>
<i>Irish Weekly (Belfast).</i>	<i>Western Star (Ballinasloe).</i>
<i>Irish Wheelman.</i>	

Further extension of this list has taken place during 1900, the *Wexford People* for 1900, the *Wexford Independent* for 1899-1900, the *Athlone News* for 1900, the *Athlone Times* for 1900, the *United Irishman* for 1900, the *Londonderry Standard* for 1900, having been presented by their proprietors.

The *Hibernian Journal* for 1792 was acquired by purchase. This was the only addition to the files of Irish eighteenth-century Newspapers in the Library.

The *Clement Chronicle* will in future be presented by the proprietor. The numbers for 1901 have been already forwarded.

APPENDIX II.

REPORT OF THE LIBRARIAN

NATIONAL LIBRARY OF IRELAND

April 26, 1901

To the Council of Trustees of the National Library of Ireland
 GENTLEMEN

During 1900, the subject-references as far as the end of "C," from Mr. Archer's catalogues, 1874-1893, were inserted in alphabetical order in two large folios, which now stand in the Public Reading Room. Duplicates and triplicates of many of the entries were inserted under various headings, in order that those who might think of looking for them there should not be disappointed. With the new year were acquired typewriters, and a small Card-catalogue outfit, and an effort to type on cards copies of the subject-references of the most recent years was begun. This has temporarily compelled the cessation of the insertion in folios of the letters "D" to "Z" from Mr. Archer's catalogues; but the latter task will be resumed.

As in 1899, many volumes in the Joly Collection have been bound, and it is incidental to this that they have received the Library stamp, like all other books sent to the binder.

Great numbers of the newspapers presented by the Royal Dublin Society have been made into volumes during the year; many volumes of Parliamentary Papers perfected and bound.

Very important has been the careful examination, collation, and binding of a number of the MSS. of the Library, including the Harris *Collectanea*. This work was done in the large basement of the Library.

Last year some account was given of the said Manuscript *Collectanea de rebus Hibernicis*, the compilation of the Irish historian, Walter Harris. Without attempting to completely treat the subject of the MSS. in the Library, the following list of some of the others which it contains may be useful:—

- Keating's "History of Ireland" in Celtic; the transcript made in the summer of 1722 by Eugene O'Rahilly. This volume is described by Father Dinneen in his edition of the Poems of Eugene O'Rahilly, lately published by the Irish Texts Society. It is a small folio of 151 pages. One volume.
- Down Survey of Tipperary, a small quarto of about 400 pages, of the seventeenth century. One volume.
- Materials for the Statistical Survey of Tipperary, date about 1853; a small octavo, with newspaper cuttings inserted in several places. 293 pages. (The volume "Tipperary" in the R.D.S. Statistical Survey was never printed.) One volume.
- Phillips, Sir Thomas: Book of the Derry Plantation, made in 1609. There is a characterization of this manuscript in Hill's "Plantation of Ulster," page 444. Consult also Harris's *Hibernica*, 1747. It is a small folio, and is incomplete. 160 pages. One volume.
- Records of the French Consulate in Alexandria: a fragment containing the years 1687 to 1694, inclusive. There are gaps in the fragment. This manuscript was found in Alexandria when the British captured the city in 1807. Two thick volumes.
- Robertson, William: A journal of William Robertson, Architect, born in Kilkenny 1770, died at Roschill, near Kilkenny, May, 1856. The journal is chiefly of architectural interest, and occupies 165 pages. One volume, folio.
- Plans and Elevations for five classes of Farm Houses and Cottages, with the necessary Farm Offices and Gardens. 1835. Large quarto, thin. One volume.
- Harris, Walter: "Life of Sir Richard Cox." A thin folio, 148 pages. One volume.

9. Larmine, William: Translation into English of the *De Divisione Naturae* of Joannes Scotus Erigena.
There is, I believe, no other translation into English of this work. Mr. Larmine, a writer of distinction both in prose and verse, died in 1900, and his brother presented the manuscript to the Library. *Two volumes, quarto.*

10. The manuscript, in five bound, and one unbound, volumes, of the "Natural History of Ireland" of William Thompson, presented to the Library in 1900 at the desire expressed by the author's brother, the late James Thompson, F.R., Macedon, Belfast.
The concluding volume has not been prepared for binding, and to do so would be a task needing considerable time, care, and knowledge of the subject. *Five volumes bound, one unbound; quarto.*

11. The manuscript of the Report of the Commission on the Bogs of Ireland, and also of the Reports of the several surveyors employed by the Royal Dublin Society in making the celebrated survey of the Bogs. This manuscript includes maps and sections on a very large scale, some of which have never been printed.
The manuscript as preserved in the Library is bound in twelve volumes, the volume containing the unpublished plans and sections being a very large one. The names of the surveyors are: Richard Lovell Edgeworth, David Aher, Alexander Nimmo, Richard Brassington, William Bald, Thomas Townshend, J. Alexander Jones, Thomas Colbourne, John Longfield, and Richard Griffith.

12. The manuscript of the translations from Bucchoz's: *Dictionnaire Vétérinaire* made by Rev. Dr. Lanigan, or under his supervision, by the direction of the Committee of the Royal Dublin Society. *One thick folio volume.*

13. "Instructions for Shepherds": a translation made in 1800-1801 by Rev. Dr. Lanigan, or under his supervision. *One folio volume.*

14. Turkish manuscript: "Zinat-al-Tawarikh." *One thin volume, average quarto format.*

15. Persian manuscript—"Nizami: The Sekander-Namch; or the History of Alexander the Great." *One volume, average octavo format.*

16. Diary of a Tour in Europe, 1788-90. *One small quarto volume, unpage.*

17. Scharff, Robert Francis: "History of European Fauna." 190 pages. *One folio volume.*

18. Giesecke, Karl Ludwig: *Verzeichnis einer geographischen Sammlung Grönlandischer Mineralien*, 1806-1813. 406 pages. *One small quarto volume.*

19. Giesecke, Karl Ludwig: *Mineralogisches Reisejournal über Grönland*, 1805-13. 646 pages. *One small quarto volume.*

20. Giesecke, Karl Ludwig: *Bericht einer Mineralogischen Reise auf Grönland im Form eines Tagebuchs.* 1,466 pages. *Two small quarto volumes.*
This is a copy with verbal variations of the immediately preceding manuscript.

21. Giesecke, Karl Ludwig: *Katalog einer vollständigen systematischen Mineralien-Sammlung nach Karstens Grundsätzen geordnet und beschrieben*, 1801; about 550 pages. *One folio volume.*

22. *Hibernia Antiqua et Nova Nomenclatura.*
"Com. 12 April, 1832. J.C."
(At the end of the alphabetically arranged names of Irish places is the following:—"Finis Jany. 12, 1771. May 12, 1832.")

23. Salis, Jerome Count de : *Mémoire addressed to the Right Honourable the Dublin Society for the encouragement of Arts and Manufactures, and the Right Honourable the Farming Society of Ireland, about the most efficient means of bettering the situation of the poorer classes in Ireland, and improving that part of the United Kingdom.* By Jerome Count de Salis of the Holy Roman Empire, Fellow of the Royal Society of London, Member of the Dublin Society, and a Proprietor of Land in Ireland, and a Corresponding Member of the Agricultural Society of Florence in Italy. 161 pages. One folio volume.

During the fifteen months to which this Report relates the Trustees have added two noteworthy MSS. to the Library. One of these is Fee-Book No. 1, of Daniel O'Connell, a quarto note-book of 172 pages, which records O'Connell's fees from the first received on May 24, 1798, up to those received in May, 1805. It is of much biographical interest. An article on this MS. has been published in the *New Irish Jurist* for Dec. 13, 1900. The other MS., a small folio of 154 pages, bound in vellum, with the book-plate of Lord Branden, contains "An Abstract of Receipts and Payments in the Treasury Office, Dublin," from July 27, 1696, to January 11, 1697.

The above memoranda do not quite complete the account of the manuscripts of the Library. And there are, besides, about twenty volumes of manuscripts in the Joly Collection, some in Celtic, and nearly all relating to Irish affairs.

The two special cataloguers employed in the revision of the old catalogue have been chiefly engaged on two important sections—(1) Biography, (2) Description and Travel. They have, in addition, catalogued several sets of volumes in the historical section, which time did not permit them to deal with in their proper place. These were the *Recueil des Historiens des Croisades*, the *Harleian Miscellany*, and the *Recueil des Historiens des Gaules et de la France*. The cataloguing of the last-mentioned series, of first-rate importance to the student of the sources of French History, proved one of the most difficult tasks yet undertaken, owing to the piecemeal manner in which the writings of the various authors were issued. The publications of the *Goethe Gesellschaft* were also included in the year's work.

At this moment, when the first Annual Report to a new Irish Department is being presented, the following notes on the early history of the Royal Dublin Society's Library are submitted. It is hoped to add more in subsequent reports.

The Dublin Society, as is well known, was founded in 1731, incorporated by Royal Charter in 1749. The first rules of the Society, made in December, 1731, provided for the foundation of a Library. Transactions of other societies and all useful works were to be purchased.

Part of the subsidy for public service granted by the State was devoted to the purchase of books which related to the purposes of the Society, the fostering of Science and the Arts. Later, when the Society appointed lecturers, the purchase of books was largely determined by the needs of these lecturers. The borrowing by the general body of the members was at first a subordinate motive. In the beginning of the nineteenth century, the introduction of persons not members of the Society into the Reading Rooms of the Society was considered a grievance, and the minutes record frequent objections to this. It is interesting to notice, however, that no efforts at artificial limitation could prevent the members from introducing readers. Stewart's *Dublin Almanack*, 1820, page 181, under "Dublin Society," has the following entry:—"Departments open to the Public. . . . The Library, on introduction to the Librarian. . ." Nor was it possible to limit the purchase of books to what are called "solid, useful works"—the catholicity of a public library asserted itself. This is brought out in the evidence taken in 1835 before the Royal Commission on the Society.

It was this Royal Commission of 1836 which first laid down definitely the principle that, as the Library was maintained out of funds supplied by the State, it should, like the British Museum Library, be open *as of right* to persons properly introduced. The words of the Report are: "The Library of the Royal Dublin Society ought to be considered as intended not solely for the advantage of the comparatively few individuals who belong to the Society, but as a *National Library*, accessible under proper regulations to respectable persons of all classes". The evidence taken before the Select Committee on Public Libraries in 1848, showed that from 11 a.m. to 5 p.m., on 300 days in the year, the Library was freely open *as of right* to persons introduced by members, that the number of attendances in one year had been known to exceed 8,000; that the sum allotted for the purchase of printed books from 1816 to 1849 was £500 per annum. The number of volumes in the Library had been estimated as 11,000 in 1839, and was about 19,000 in 1849.

The Committee which took evidence on the Royal Dublin Society in 1862 learned that "the allocation for the purchase of books, binding and contingencies, is £550 a year; the whole expense of this Department [the Library] is about £930"; further, that "the experiment of opening the Library in the evening three times a week, has been very successful." "The funds will not allow the opening of it every night. . . . The average attendance of readers, exclusive of members, is stated in the last Report to be forty-nine in the day and nine in the evening; but at present [in 1862] double the number attend in the evening." "The forms [of introduction used by the members] only amount to a guarantee of respectability."

The newspapers of the National Library are at present regarded as an important part of its contents. The Commission of 1836 reported itself adverse to the expenditure of public money on newspapers. The following points in the evidence on this subject are quoted verbatim:—"The practice of taking in newspapers as sources of information has existed in the Society for upwards of a hundred years." "Whatever sum is appropriated to the Library, it is out of that the newspapers have been paid for, with the exception of one short interval." "From £70 to £75 [was spent on newspapers annually]."

I have the honour to be,

Your obedient Servant,

THOMAS W. LISTER,
Librarian.

DEPARTMENT OF AGRICULTURE AND TECHNICAL
INSTRUCTION FOR IRELAND.

ROYAL COLLEGE OF SCIENCE FOR IRELAND.

REPORT OF THE DEAN AND COUNCIL FOR 1900.

TO THE SECRETARY OF THE DEPARTMENT OF AGRICULTURE AND
TECHNICAL INSTRUCTION FOR IRELAND.

SIR,

I have the honour to submit the Report of the Dean and Council of the Royal College of Science for Ireland for the year 1900, together with copies of the examination papers for the Session 1899-1900, and the Directory for the current Session.

The courses of instruction have been carried out in accordance with the programme sanctioned by the Department of Science and Art and the Department of Agriculture and Technical Instruction, although difficulties have arisen owing to the lack of accommodation in some of the laboratories, and the comparatively small sum available for the purchase of apparatus and materials for practical work.

The usual sessional examinations were held in all the subjects of instruction.

Courses of instruction for teachers, including lectures and laboratory practice in each case, were also given voluntarily during the vacation, as follows : ---

Physics (Electricity and Magnetism), by Professor Barrett.

Chemistry (Chemical manipulation), by Mr. J. Holms Pollok.

Botany, by Dr. G. H. Pethybridge.

In October, 1900, the Department of Agriculture and Technical Instruction appointed a number of students to enter on courses of one or three years in the College, with a view to their becoming qualified as teachers of Science. The ordinary entrance examination in Elementary Mathematics was held in the case of all these students, except where proof of previous qualification could be produced. It is a matter of satisfaction to the Council that the training of teachers—one of the objects for which the College was founded—has thus received recognition.

In the same month, it was arranged that the students of the Royal Veterinary College for Ireland should receive instruction in Chemistry, Zoology, and Botany, in the Royal College of Science.

The introduction of these new classes of students has further emphasized the inadequacy of the accommodation in the present building. Attention has again and again been called to this matter, a concise statement, for example, appearing in the Report of the Dean and Council for 1898. It will be impossible to adequately carry on the instruction of the teachers in training in their second and third years under the present arrangements as to the staff of assistants in the College, three of whom are employed for one term only of each Session, two of these being, moreover, temporary assistants.

In response to a communication from the War Office, the Council submitted the names of certain students for nomination to commissions in Her Majesty's forces. Of these, Mr. R. M. Gage received a commission in the Artillery, Mr. A. H. Blackwood Hamilton, Mr. E. L. Manders and Mr. R. J. Stoker received Infantry commissions.

The inadequate accommodation in the Physical Department has been repeatedly pointed out, and only a slight relief has been afforded by the small addition of a part of the South Gallery, at the expense of the Department of Mineralogy. A large part of the space in the present physical laboratory needed for students is occupied by cases for apparatus. Much of this apparatus has to be stowed away in order to give room, and has to be set up and readjusted for use when required, and again taken down, to its manifest injury.

The Professor of Physics reports that during the year the collection of Physical apparatus has been enlarged by the addition of Professor Ewing's Magnetic Permeability Bridge and Yoke, Lord Kelvin's Electrostatic Voltmeter, a model current Transformer specially designed for class instruction, and one or two other smaller pieces of Electro-technical apparatus. The recent employment of a skilled mechanic for repairs of physical apparatus, &c., is most satisfactory, and has resulted in a distinct saving of expense.

The Professor of Chemistry reports that during the past year the effect of overcrowding in the lecture room and chemical laboratory has been seriously felt to be not only a hindrance to the students and an obstacle in the way of their practical studies, but also detrimental to their health, and that of the teaching staff more particularly. In consequence of the absence of any proper means of supplying fresh air to the chemical laboratory, all those who are engaged therein have to submit to conditions which cause them to be slowly poisoned or alternatively exposed to violent draughts of cold air from open windows. It frequently occurs that it is impossible to work in the laboratory if the windows are opened, because of the risks of accidents from the breakage of vessels containing corrosive acids or inflammable liquids, and of gas flames being blown into the faces of the students.

From 1890 onwards, reports and representations, often of a detailed character, have been made respecting the difficulty of

conducting work under the insanitary conditions that still prevail. The remarks in the report of the Dean and Council for 1895 may be cited as an example. A complete scheme of ventilation, for which plans were prepared some years ago, none the less remains to be undertaken. The so-called Tobin's tubes that have been inserted were pronounced unsuitable by the Professor of Chemistry prior to their erection, and have proved not only ineffective, but also, as a general rule, inoperative. The condition of the laboratory has been the cause of the resignation of one of the demonstrators, and of serious protest from all.

The Professor of Zoology reports that the resources of his laboratory have been strained, owing to the large number of students in the first year, and also to a large class of veterinary students. A case of specimens had to be removed, in order to provide seats for these students. If these classes continue to be as largely attended, it will be necessary to increase the teaching staff, and more accommodation and appliances will be required.

The Professor of Botany reports that, as a temporary arrangement, a part-time assistant was available in the second term of the Session. The post was taken by Mr. G. H. Pethybridge, PH.D., B.Sc., whose services were continued during July for the voluntary summer course for teachers, as well as for the large class of Veterinary students during the first term of the present Session, 1900-01. The Professor of Botany hopes that Dr. Pethybridge's services may be permanently available for the botanical teaching in the College. Owing to the fact that only one laboratory is available in the College for both Botany and Zoology, the Veterinary students worked in the laboratory at the Royal Botanic Gardens, Glasnevin, where every facility was given them.

The Professor of Geology and Mineralogy gave the course of demonstrations in Palaeontology in the second term of last Session, a course usually undertaken by the demonstrator. This is necessitated by the present arrangement as to assistants, which is the best that can be made under the circumstances, but which cripples the work of the Department of Botany in one term and of the Department of Geology in the other. Mr. H. N. Woodward, B.A., of Downing College, Cambridge, was appointed temporary demonstrator for the first term of the Session 1900-01. Under his care progress has been made with the arrangement of the teaching collections. Gifts of fossils, rocks, and minerals, have been received from Miss Going (from the collection of the late Mr. E. Mayne), Madame Christen, and Mr. A. Harker, M.A.; Mr. E. St. J. Lyburn, A.R.C.S.C.I., has presented a complete series of samples of the rocks assayed by him during his investigation as to the occurrence of gold in Ireland. A number of useful specimens were bought from the collection of the late Dr. Frazer, of Dublin.

As in previous years, the practical work on geological maps had to be done in the lecture room, owing to the small accom-

modation for students in the laboratory. The few additional places secured by extending the laboratory bench receive no daylight, and all work has to be done at them by the aid of gas-lamps.

In the Engineering Department a large double-gear'd drilling machine and a 2-h.p. oil engine have been added to apparatus in the past Session, while the testing-machine has been improved by several additions.

In consequence of the large increase in the number of students in the Engineering Schools, which was due to teachers in training and also occasional students, it became necessary to appoint a temporary assistant. This was sanctioned by the Department of Agriculture and Technical Instruction. The demonstrations by the Professor in workshop practice and testing materials have been considerably enlarged in their scope.

The Professor of Engineering undertook, at the request of the Department, to deliver lectures in different parts of Ireland on the advantages of technical education, one course being addressed to the machine-trades and the other to artisans generally.

The following scientific papers have appeared during the past year: ---

Professor W. F. BARRETT, F.R.S., M.I.E.E.:

Book 2 of an investigation of the claims of the so-called Dowser, a psycho-physical research. On some novel Thermo-Electric Phenomena.---Trans. Royal Dublin Society, Jan. 1900, and *Philosophical Magazine*, March, 1900.

Professor BARRETT, Mr. W. BROWN, B.Sc., and Mr. R. A. HADFIELD, M.I.N.S.T.C.E., Master Cutler of Sheffield:

On the Electrical Conductivity and Magnetic Permeability of various alloys of iron.---Parts I. and II., Sci. Trans. Royal Dublin Society, January, 1900.

Professor W. N. HARTLEY, F.R.S.:

The Action of Heat on the Absorption Spectra and Chemical Constitution of Saline Solutions.---Scientific Transactions of the Royal Dublin Society. Vol. VII. (Series II.), pp. 253-312.

On the probable origin of some of the lines observed in the Spectra of Stars and of the Chronosphere.---*Astrophysical Journal*. Vol. XI.

Professor W. N. HARTLEY, F.R.S., and Professor JAMES J. DOBBIE, D.Sc., M.A.:

(1.) The absorption Spectra of Ammonia Methylamine, Hydroxylamine, Aldoxime, and Acetoxime.---Trans. Chem. Soc., Vol. 77, p. 318,

- (2.) The Ultra-Violet Absorption Spectra of some closed Chain Carbon Compounds, Part II., Dimethylpyrazine, Hexamethylene, and Tetrahydrobenzene.---Trans. Chem. Soc., Vol. 77, p. 846.
- (3.) The Curves of the Molecular Vibrations of Benzantialdoxime and Benzsynaldoxime.---Trans. Chem. Soc., Vol. 77, p. 509.
- (4.) Spectrographic studies in Tautomerism.
The Absorption Curves of the Ethyl Esters of Dibenzoyl succinic Acid.---Trans. Chem. Soc., Vol. 77, p. 498.

Professor W. N. HARTLEY, Professor JAMES J. DOBBIE, and Mr. PHOTIOS G. PALATSEAS :

A study of the Absorption Spectra of o-Oxy Carbonil and its Alkyl Derivatives in relation to Tautomerism.---Trans. Chem. Soc., Vol. 77, p. 839.

In his capacity as Chairman of a Committee of the British Association appointed to investigate the relationship between the Absorption Spectra and the Chemical Constitution of Organic Substances, Professor Hartley presented a Report for the year 1900 embodying the foregoing publications.

Professor A. C. HADDON, F.R.S., has been engaged in working out the results of his recent expedition to British New Guinea and Sarawak, and has published a paper on the Anthropogeography of British New Guinea.---Journal Royal Geographical Society, 1900.

Professor T. JOHNSON, D.Sc. :

"The Flax Crop and Flax Retting."---Journal of the Department of Agriculture and Technical Instruction for Ireland, I., 1900.

Professor G. A. J. COLE, and Mr. J. A. CUNNINGHAM, A.R.S.C.I., B.A. :

"On certain Rocks styled 'Felstones' in the County of Donegal."---Proc. Royal Dublin Society, 1900.

Professor G. A. J. COLE :

"On Metamorphic Rocks in Eastern Tyrone and Southern Donegal."---Trans. Royal Irish Academy, 1900.

GRENVILLE A. J. COLE,
Dean of Faculty,
1900--1901.

To the Director,
Institutions of Science and Art,
Dublin.

SECRETARIAL REPORT OF THE ROYAL COLLEGE OF
SCIENCE FOR IRELAND FOR THE YEAR 1900 AND
THE SESSION 1899-1900.

The number of students who attended the College during the Session which terminated on the 21st of June, 1900, was 98. Of these 70 were Non-Associates and 28 Associate Students taking the three years' course.

The entries for the last two Sessions were as follows:—

1897-98, ... 35	Associates, ... 71	Non-Associates.
1898-99, ... 22	Associates, ... 75	Non-Associates.

The Associate Students were divided as follows:—

First Year, ...	... 14
Second Year, ...	... 7
Third Year, ...	... 7

The seven third-year Associate Students passed their Final Examinations, and were awarded Diplomas as follows:—

Mr. William M. Cross, Diploma in Engineering.
Mr. James S. Rogers, " " "
Mr. Cyril A. Harrison, " " "
Mr. David S. Jardin, " " Manufactures.
Mr. John A. Cunningham, " " "
Mr. Robert B. Forster, " " Applied Physics.
Mr. Alfred L. Oke, " " Mining.

Mr. Cunningham took out the third year of his National Scholarship, and thus was enabled to work for a second Diploma, he having obtained the Engineering Diploma at the end of last Session.

Only one of the two Royal Scholarships offered each year for competition to the First Year Non-Government Associates was awarded to Mr. Ernest W. Millar, who obtained the highest number of marks at the Sessional Examinations.

The Silver Medal offered for competition to all the First-Year Associates was awarded to Mr. Sydney A. Edmonds, a Royal Exhibitioner.

Mr. Allen, an Associate of the College, was again granted a vacant Royal Exhibition, to enable him to continue his Research work in the Physical Laboratory; but as he was appointed assistant in the Laboratory for the second term he had to resign the Exhibition.

Mr. John A. Cunningham, an Associate of the College, was, on the recommendation of the Council, awarded a Research Scholarship by Her Majesty's 1851 Exhibition Commissioners, which he is taking out at the Cavendish Laboratory, Cambridge. Mr. Wills, also an Associate of the College, has entered on the third year of his 1851 Research Scholarship at the same Laboratory.

Mr. E. J. J. Britton, a Royal Exhibitioner, having obtained a Commission in the Ordnance Department, left the College in November. Messrs. Gage (an Associate of the College), Stoker, Hamilton, and Manders (Students), were, on the recommendation of the Council, given Commissions in the Army.

During the year Mr. Hanna resigned his post of Demonstrator in Botany, Geology, and Palaeontology, and Mr. H. N. Woodward was appointed Demonstrator in Geology and Palaeontology.

During the year, 427 volumes, including unbound Journals, Transactions, and Reports, were added to the Library, which was visited by 885 readers, over and above the College Staff and Students.

The advantages afforded to the students by opening the Library for them on two evenings in each week, from 7 to 10, p.m., were duly appreciated, and the attendances on these evenings, between January and the end of the Session, were 292.

The following voluntary evening and afternoon courses were given during the Session :---

	Number Attending.
10 Lectures on Electric Lighting, &c., by Mr. Brown,	47
8 Laboratory Lessons in Electric Lighting, by Mr. Brown,	9
11 Lectures on the Physiology of Plants, by Dr. Pethybridge,	11

The following summer courses for teachers were held, as in the previous year, in July :---

	Number Attending.
20 Lectures on Physics, by Professor Barrett, and	
20 Lessons in Physics Laboratory work, by Professor Barrett, Mr. Brown, and Mr. Allen, ...	31
20 Lectures on Chemistry, by Mr. Pollok, and	
18 Lessons in Chemical Laboratory work, by Mr. Pollok and Mr. Jardin,	28
20 Lectures on Botany, and	
20 Lessons in Botanical Laboratory work, by Dr. Pethybridge,	3

At the conclusion of these courses examinations were held, and thirty-seven certificates, entitling the holders to teach under the Board of Education, South Kensington, were issued as follows:—

In Magnetism and Electricity,	...	19
In Chemistry,	...	16
In Botany,	...	2

The usual Sessional Examinations were held, the results of which were as follows:—

SUBJECTS OF EXAMINATIONS.	NUMBER OF STUDENTS IN CLASS.	NUMBER EXAMINED.	SIMPLY PASSED.	PASS WITH CREDIT.	PRIZE WINNERS.
FIRST YEAR'S CLASSES.					
Pure Mathematics,	22	10	2	2	S. A. Edmonds, 1st Prize. G. H. Delf, 2nd Prize.
Mechanics,	20	10	2	3	G. H. Delf, 1st Prize. S. A. Edmonds, 2nd Prize.
Descriptive Geometry,	21	13	4	2	S. A. Edmonds, 1st Prize.
Physics,	25	17	3	5	G. H. Delf, 1st Prize. S. A. Edmonds, 2nd Prize.
Chemistry,	22	19	5	7	G. H. Delf, 1st Prize. S. A. Edmonds, 2nd Prize.
Zoology,	14	14	7	3	G. H. Delf, 1st Prize. S. A. Edmonds, 2nd Prize.
Botany,	15	9	5	2	S. A. Edmonds, 1st Prize. G. H. Delf, 2nd Prize.
SECOND YEAR'S CLASSES.					
Mathematics,	7	7	4	3	S. A. Main, 1st Prize. J. Davidson, 2nd Prize.
Mechanics,	6	6	2	2	S. A. Main, 1st Prize. J. Davidson, 2nd Prize.
Machine Construction and Drawing.	6	6	1	5	S. A. Main, 1st Prize. A. A. Pollock, 2nd Prize.
Experimental Physics,	5	5	2	3	J. Davidson, 1st Prize. T. Crook, 2nd Prize.
Applied Physics,	2	2	1	1	S. A. Main, 1st Prize.
Advanced Chemistry,	6	1	—	1	T. Crook, 1st Prize.
Practical Chemistry,	1	1	—	1	T. Crook, 1st Prize.
Mineralogy,	8	7	2	5	S. A. Main, 1st Prize. T. Crook, 2nd Prize.
Advanced Zoology,	8	6	—	4	Miss A. Vance, 1st Prize. Miss J. Stevens, 2nd Prize. E. Crook, 2nd Prize.
Advanced Botany,	10	5	2	3	—

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THIRD YEAR'S CLASSES.					
Practical Physics (Engineering Faculty).	3	3	1	2	W. M. Cross, 2nd Prize.
Practical Physics (Applied Physics Faculty).	1	1	.	1	R. B. Forster, 1st Prize.
Practical Chemistry, .	1	1	.	1	D. S. Jardin, 1st Prize.
Mathematical Physics, .	1	1	.	1	R. B. Forster, 1st Prize.
Applied Mechanics, .	3	3	.	3	W. M. Cross, 2nd Prize. C. A. Harrison, 2nd Prize.
Mechanism and Thermodynamics.	7	6	1	5	D. S. Jardin, 2nd Prize.
Engineering, .	3	3	.	3	W. M. Cross, 1st Prize.
Surveying, .	9	7	3	4	W. M. Cross, 1st Prize. A. L. Oke, 2nd Prize.
Geology and Palaeontology.	10	5	3	2	A. L. Oke, 1st Prize.
Mining, .	1	1	.	1	A. L. Oke, 1st Prize.
Assaying, .	1	1	.	1	A. L. Oke, 1st Prize.
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Professor Lyon,	.	.	.	178†

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